MetroLinks Distribution Cabinet (MDC-CB)

User Manual 131220 A0

Telect

Contents

1. Description

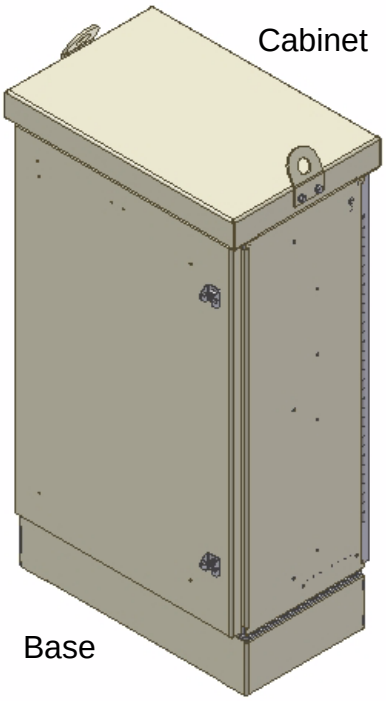
Telect's MDC-CB is an indoor/outdoor fiber telecommunication distribution cabinet. The cabinet houses Telect's bulkhead-style Patch Modules to handle optical signal distribution between a CO and the network edge. A single MDC-CB cabinet with up to six Telect Patch Modules can provide distribution service to 432 homes, offices and/or nodes.

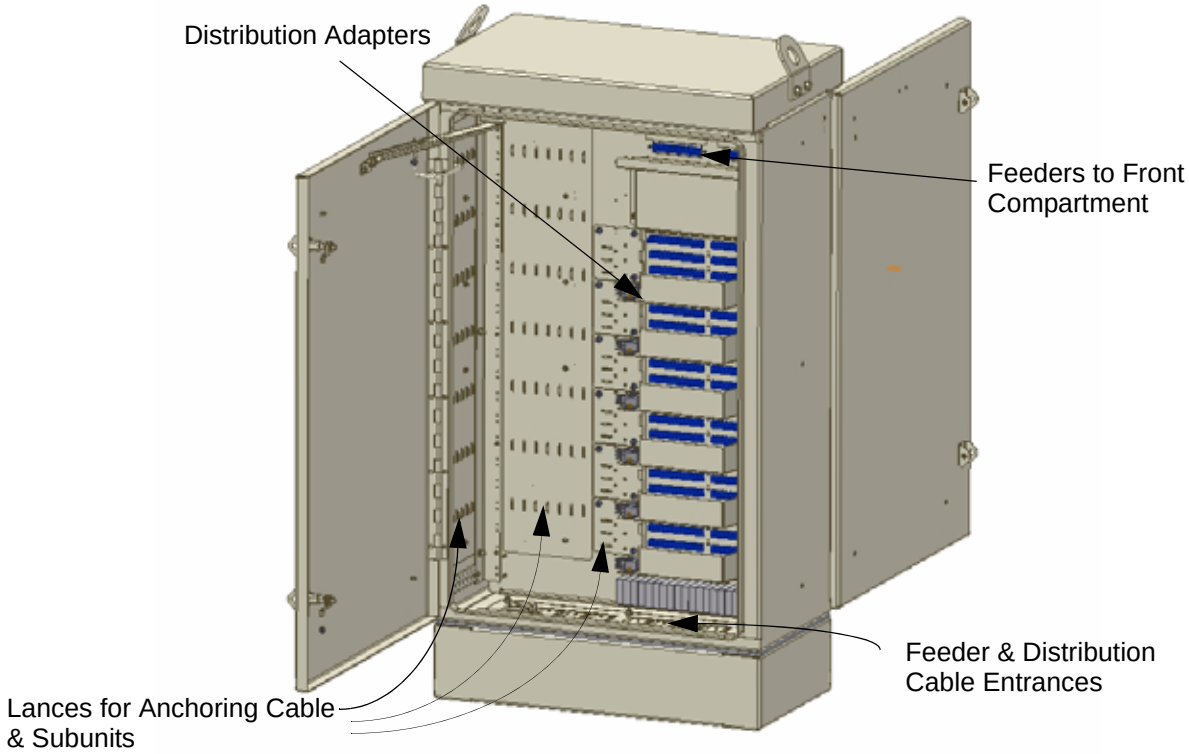
The weather-tight, heavy-gauge, light-weight aluminum cabinet is almond with two lockable doors — both doors have wind stays. OSP feeder and distribution cable enter through weather-tight cable clamps at the bottom of the rear compartment:

Illustrations that follow depict open-door views of MDC-CB cabinets with and without in-cabinet splicing.

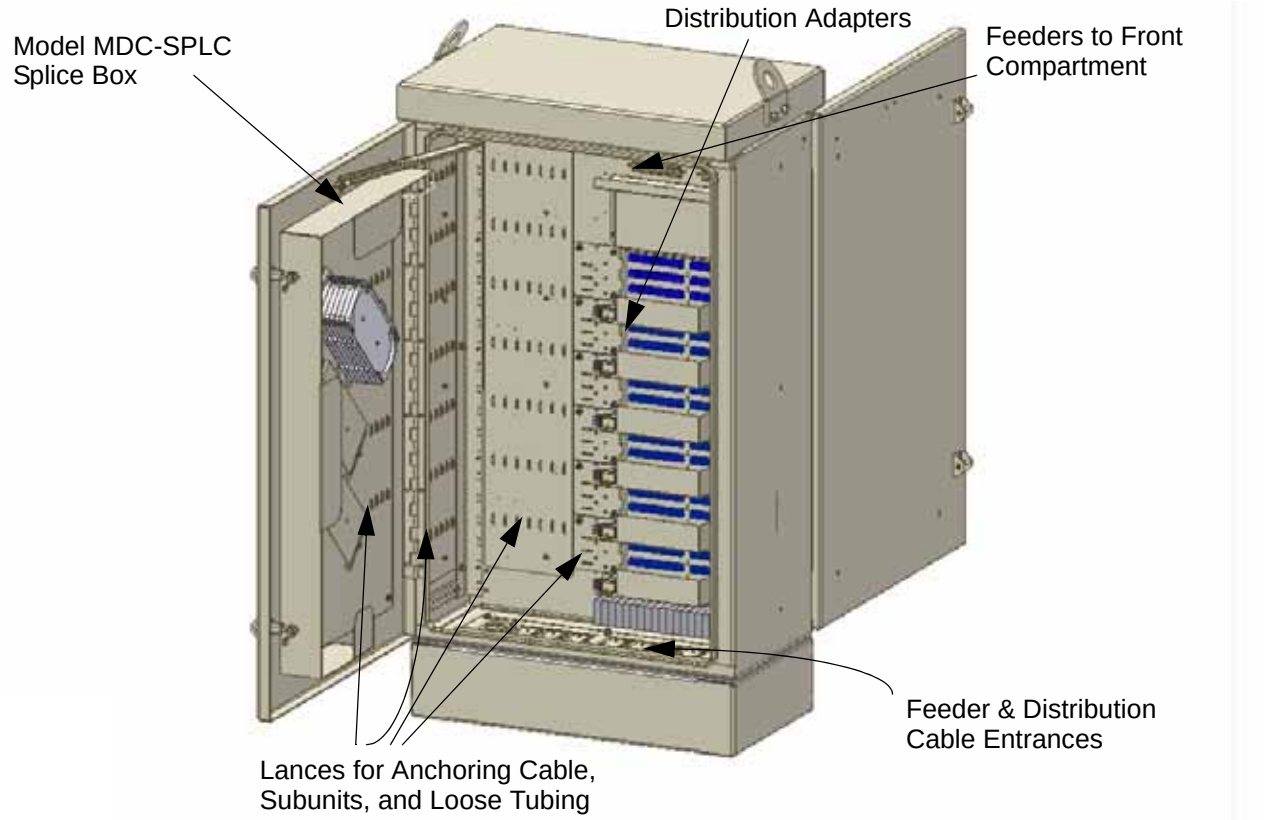
Along with the cabinet, Telect includes a footprint template which is also the isolation pad, two cable entrance clamps for two feeder cables between $^{3}/_{8}$ in. (9.6 mm) and $1^{1}/_{5}$ in. (30.5 mm) in diameter, and a $^{9}/_{32}$ in. Allen-head key for opening the door latches. The MDC-CB includes a 6-in. base. A 12-in. Telect base (Model MDC-R12) is optional.

Physically, the only difference between MDC-CB cabinets with or without splicing is the splice box on the rear door. Feeder and distribution cabling for the two is, however, quite different.

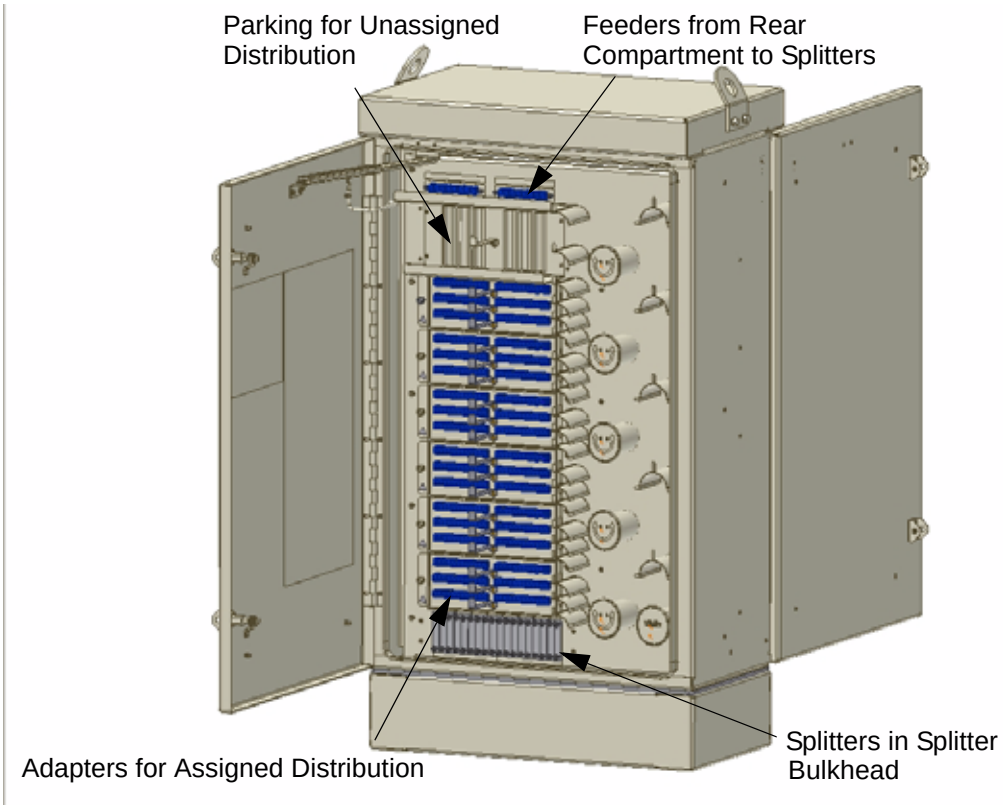




MDC-CB Without In-Cabinet Splicing (Rear Corner View)



MDC-CB With In-Cabinet Splice Box (Rear Corner View)

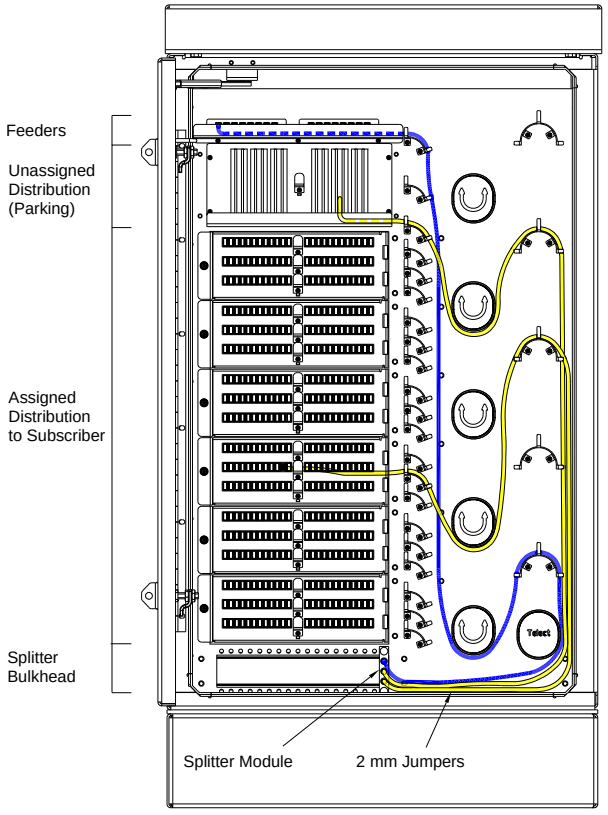


Front Corner View With Door Open

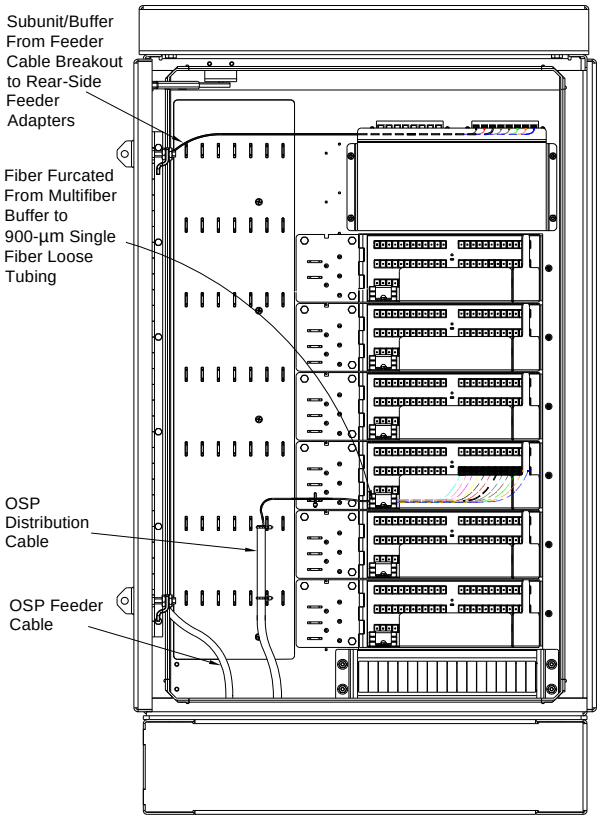
.MDC-CB WITHOUT REAR COMPARTMENT SPLICING

Cabling without in-cabinet splicing involves an aerial or below-ground splice box for splicing the distribution and feeder cables to connectorized cabinet cabling.

- At the cabinet, the OSP distribution cable is clamped at the floor of the rear compartment and then routed along the cabinet's compartment partition. The connectorized 250 µm strands break out here into subunits/buffers and then connected to one of the six possible, 72-channel Patch Modules. Each patch module contains SC/APC adapters to interface the distribution fiber in the rear compartment to the cross connections in the front compartment.
- Feeder cable is anchored along the rear side wall where 900 µm fiber breaks out into subunits/buffers and routed to 16 SC/APC interface adapters near the top of the cabinet.



Front View With Door Open*



Rear View With Door Open*

* Splitter and Patch Modules are sold separately.

Each SC/APC adapter at the top of the cabinet serves to feed the fiber signal to a blue jumper in the front compartment, shown in the preceding illustration. The blue jumper is routed down through the right portion of the front compartment, then around a couple of spools and an arc. The two spools at the bottom route the blue fiber to a Telect Splitter Module.

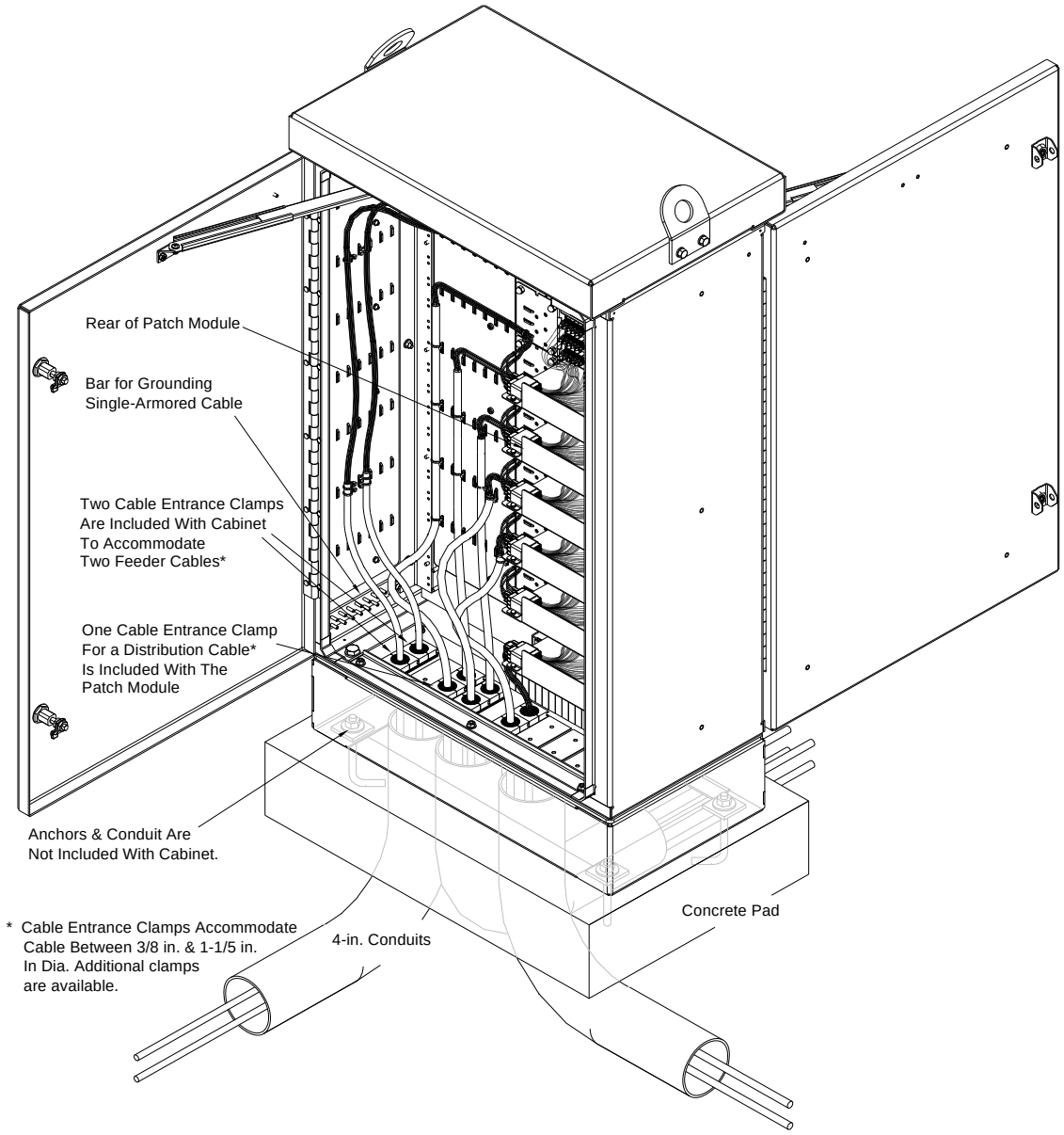
Up to 18, 1x4, 1x8, 1x16, or 1x32 Telect Splitter Modules can be installed in the splitter bulkhead at the bottom of the front compartment. Each splitter module consists of the splitter, one blue "input" jumper, and either 4, 8, 16, or 32 yellow "output" jumpers. All are 2 mm jumpers, 2.1 m in length.

Splitter module installation and all of the distribution changes occur in this front compartment:

- Unassigned jumpers are routed via spools and arcs to a parking station for later subscriber assignment.
- Assigned jumpers are routed via the spools and arcs to the front of the SC/APC adapters in the front of the patch modules for cross connection to the distribution fiber connected to the rear of the patch modules.

Each of the six possible patch modules (Model MDC-P72N) features 72 SC/APC cross-connect adapters for a total of 432 possible subscriber cross connections. Model MDC-P72N-F100D includes the Model MDC-P72N connected to 100 ft (~30.5 m) of Dri-Flex™ OSP cable containing 250 µm fiber furcated to 900 µm loose tubing with an SC/APC connector.

The following illustration shows a deployed cabinet along with a partially cabled rear compartment.



MDC-CB With Rear Compartment In-Cabinet Splicing

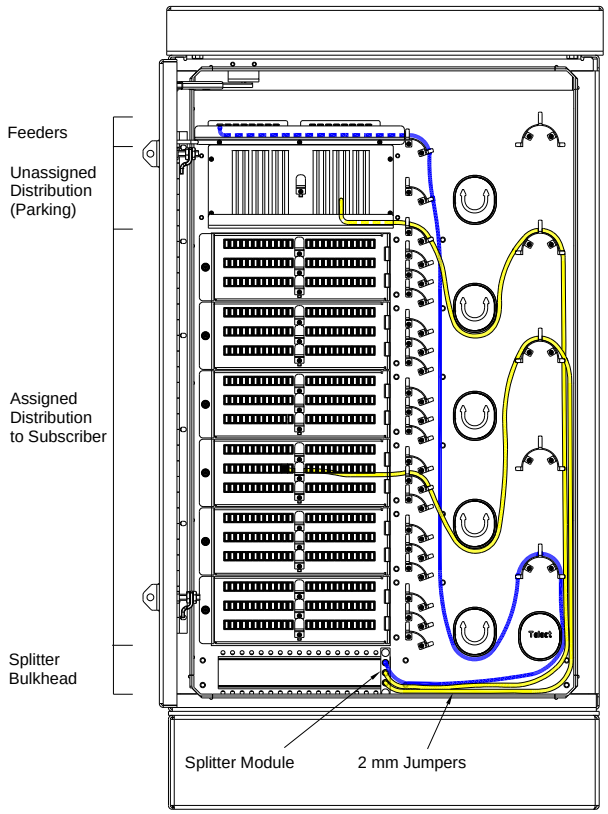
The distribution and feeder OSP enter the cabinet at the floor of the rear compartment. The installer clamps the cable and breaks out the fiber into 3-mm, radius-control (limited bend) loose tubing. The installer anchors feeder and distribution tubes along the cabinet's side wall and rear door.The tubes are guided to the top of the optional splice box located on the door.

The optional in-cabinet Telect Splice Box (Model MDC-SPLC) holds three pods of splice cassettes surrounded by a runway for the loose tubing.

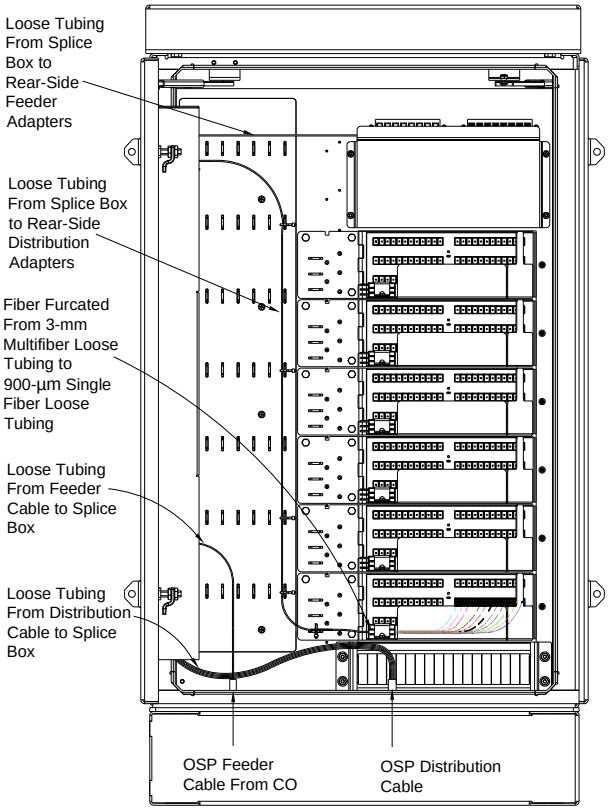
Each cassette normally accommodates 24 splices. If all feeder and distribution fiber requires splicing, a total of 18 cassettes are needed to accommodate all 432 subscribers. For the distribution splices, each pod would hold 6 splice cassettes plus one additional cassette on one of the pods for up to 16 feeder splices.

Feeder and distribution strands are spliced to connectorized fiber protected by 3-mm, radius control loose tubing. All tubing from the cassettes to the feeder interface and patch modules cross the door hinge near the top of the cabinet. The tubing is anchored along the compartment partition and guided to SC/APC feeder or distribution adapters:

- The feeder interface near the top, rear-side of the cabinet contains 16 adapters to pass feeder signals to the front compartment splitters.
- The distribution adapters are located on 72-port modules (Models MDC-P72N). Fan-out blocks on the Patch Modules are used to accommodate the transition from 3-mm, multi-fiber loose tubing to 900 µm transparent tubes, one for each of the 72 fibers. A total of 6 Patch Modules accommodate the 432 possible subscribers. The SC/APC adapters pass signals to the front compartment for assignment patching.



Front View With Door Open*



Rear View With Door Open*

* Splitter Modules, Patch Modules, Splice Box, Splice Cassettes, Fan-Out Blocks, and Radius-Control Loose Tubing are Sold Separately.

Front Compartment Cross Connections

Front compartment feeder and cross-connect cabling is the same for cabinets with or without in-cabinet splicing.

Each SC/APC adapter at the top of the cabinet serves to feed the fiber signal to a blue jumper in the front compartment. The blue jumper is routed down through the right portion of the front compartment, then around a couple of spools and an arc. The two spools at the bottom route the blue fiber to a Telect Splitter Module.

Up to 18, 1x4, 1x8, 1x16, or 1x32 Telect Splitter Modules can be installed in the splitter bulkhead at the bottom of the front compartment. Each splitter module consists of the splitter, one blue “input” jumper, and either 4, 8, 16, or 32 yellow “output” jumpers. All are 2 mm jumpers, 2.1 m in length.

Splitter module installation and all of the distribution changes (patching) occur in this front compartment:

- Unassigned jumpers are routed via spools and arcs to a parking station for later subscriber assignment.
- Assigned jumpers are routed via the spools and arcs to the front of the SC/APC adapters in the front of the patch modules for cross connection to the distribution fiber connected to the rear of the patch modules.

Features

- Simple cabling scheme. Separate compartments for OSP cable (feeder & distribution at the rear) with splitter growth and cross-connections at the front
- Patch module bulkhead swings out into front compartment for convenient adapter and connector inspection and maintenance
- 30 mm (min.) bend radius control throughout cabinet & accessories
- Highest splitter density — up to 32 splits per splitter module
- Expandable. Easily add splitter modules as distribution grows
- Popular bulkhead-style modular distribution (up to 6, 72-channel patch modules)
- Bulkhead-style splitter bank for up to 18 Splitter Modules containing 1x4, 1x8, 1x16, or 1x32, premium PLC splitters
- Laser eye protection throughout. All adapters and connectors include dust caps
- Front & rear padlockable doors with wind strays (padlocks not included). Routing guide and designation chart located conveniently on inside of front door.
- Includes grounding bar for armored cable.

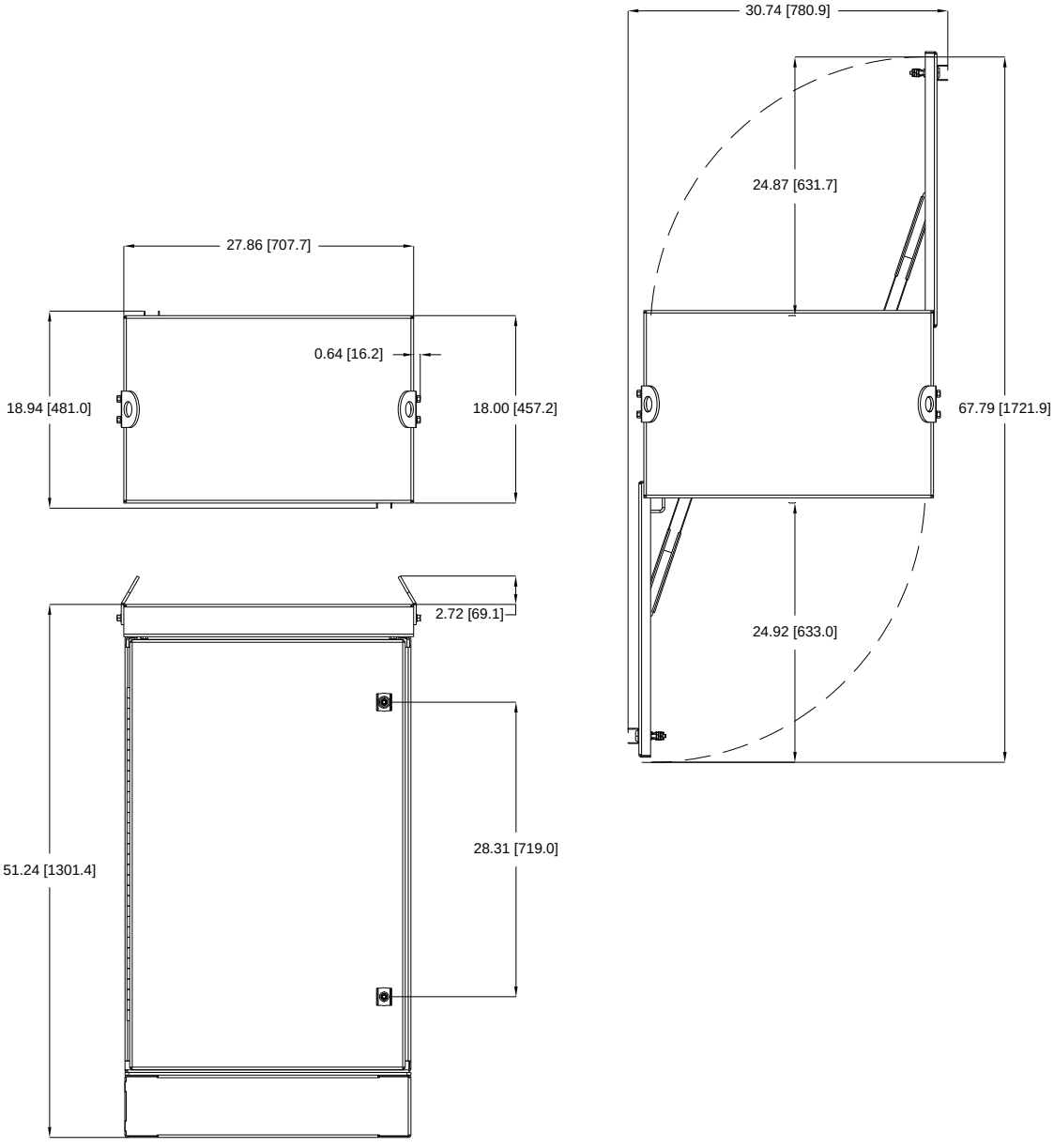
Benefits

- Low cost — High Fiber Density — Versatility
- Better access — full front and rear doors open wide for simple access and installation
- Simple Site Prep
- Easy Installation. Ideal for both local and remote sites
- Designed for compliance: NEMA 4, GR-771, GR-487
- Designed & Built for Growth
- Simple, straight-forward cable management, access, circuit identification.

Specifications & Capacities

- **Dimensions** (Overall WxHxD): 28 x 54 x 18 in (710 x 1375 x 460 mm). See the following for detailed dimensions.
- **Weight** (without modules, accessories, or cabling): ~125 lb (~60 kg).
- **Feeder & Distribution Cable Entrance Positions/Capacity**: 16
- **Cable Diameter**: $^{3}/_{8}$ in. (9.6 mm) to $1^{1}/_{5}$ in. (30 mm), max.

- **Fiber Signals**: 16 feeder signals, max.; 432 distribution signals, max.
- **Adapters**: SC/APC at cabinet end of fibers
- **Cross-Connect Bulkhead Positions**: 6, max. Each bulkhead accommodates 72 X-connects (6 x 72 = 432)
- **Splitter Module Positions**: 18, max. Each accommodates a 1x4, 1x8, 1x16 or 1x32 Telect Splitter Modules with front access installation and cabling. “Inputs” and “outputs” are 2-mm jumpers, 2.1 m long with SC/APC connectors
- **Parking Positions**: 72, max., to accommodate unassigned splitter “outputs”
- **Cabinet Material:** 0.125 in, 5052 Aluminum
- **Cabinet Finish**: Powder-coat almond



2. Cabinet Installation

Installation Considerations

⚠ WARNING

WARNING! Fiber cables transmit invisible infrared light. To avoid eye damage or blindness, never look directly into fibers or connectors.

WARNUNG! Faserkabel übertragen unsichtbares Infrarotlicht. Um eine Schädigung der Augen oder Blindheit zu vermeiden, schauen Sie nicht direkt in die Fasern oder Stecker.

ADVERTENCIA ! Los cables de fibra transmiten luz láser o infrarroja invisible. Para evitar lesiones oculares o ceguera, nunca mire directamente a las fibras o conectores.

AVERTISSMENT ! Les câbles à fibres transmettent un rayon laser ou une lumière infrarouge invisible. Pour éviter toute lésion occulaire ou cécité, ne regardez jamais directement dans les fibres ou dans les connecteurs.

(!) ALERT

ALERT! This product must be installed and maintained only by qualified technicians.

(!) ALERT

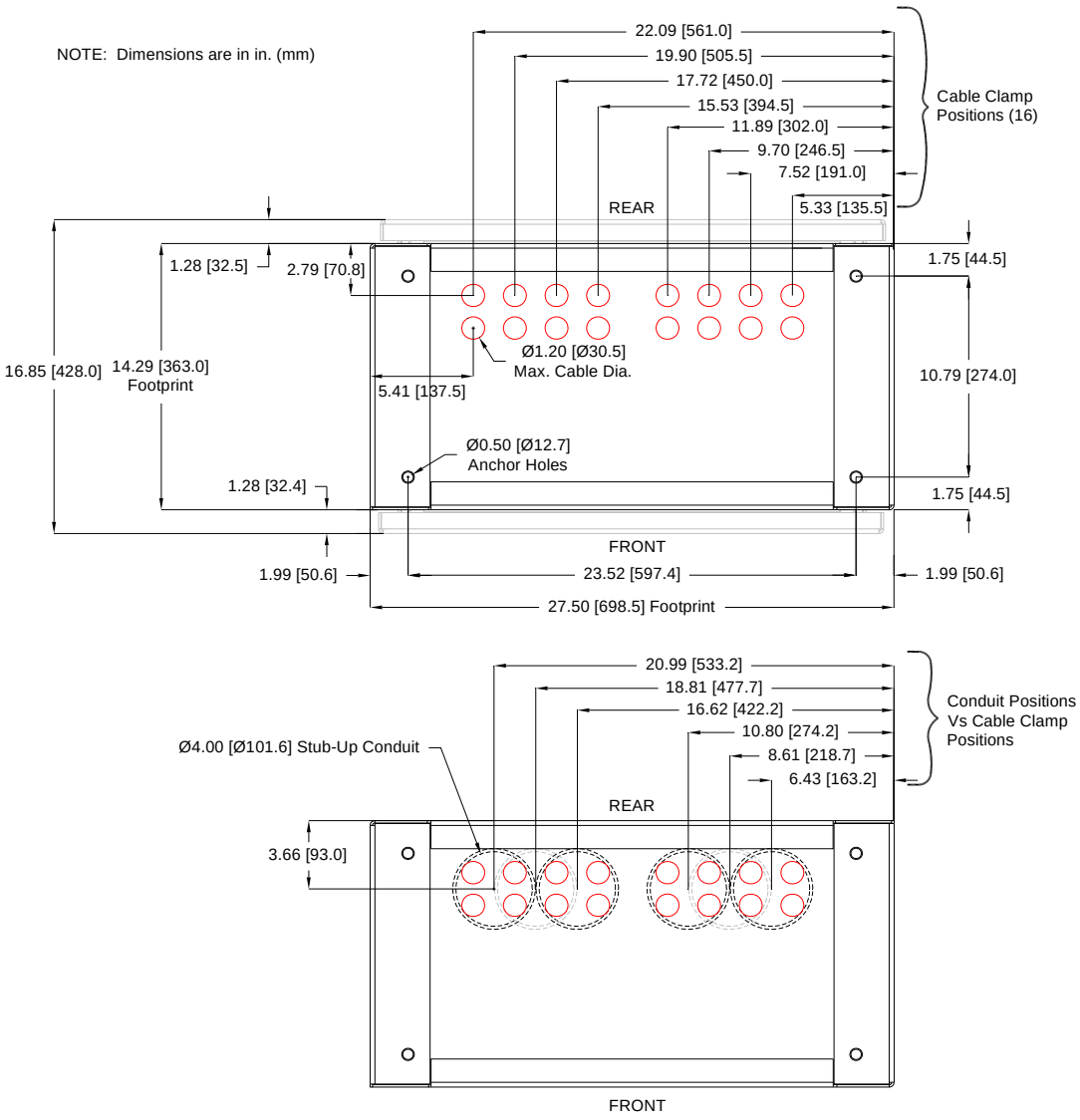
ALERT! These instructions presume you have verified that the Telect equipment being installed is compatible with the rest of the system, including power, ground, circuit protection, signal characteristics, equipment from other vendors, and local codes or ordinances.

Pre-Installation

Location & Layout —

Use the floor template (isolation pad), or the following illustration, to lay out and construct a re-enforced concrete pad, grating, or other suitable, stable platform to accommodate the cabinet, anchorage, and cabling. Concrete pads must be at least 6 in. (~150 mm) thick.

Telect does not include an anchor kit or a vault-to-cabinet adapter with the cabinet. Order Telect's seismic anchor kit (Model MDC-CBAK) for either indoor or outdoor deployment on concrete. (See "Standard Accessories" Page 7-1.) Model MDC-CBAK is an expansion-style anchor requiring drilling into the pad; also acceptable are embed L-shaped anchors with ½ in. (M12) threads, available at appropriate hardware or specialty stores.



Please note the following recommendations:

- Telect recommends that the cabinet be mounted with either the 6-in.-high base or optional 12-in.-high base (Models MDC-R12) or a suitable vault, along with the isolation pad included with the cabinet. (See “Standard Accessories” Page 7-1.) If the cabinet is mounted to a concrete pad without a pedestal or vault, the stub-up conduit for the cables must be positioned accurately and must be either absolutely flush with or countersunk below the top of the pad.
- For a cabinet with a Telect base, the stub-up conduit should not rise above a concrete pad more than about 3 in. (~75 mm) for a 6-in.-high base and about 6 in. (~150 mm) for a 12-in.-high base. See the following illustration.
- Telect recommends running cables in 4-in. stub-up conduit. Normally, two 4-in. conduits are necessary: one for the feeder cable(s) and at least one for the distribution cable(s), as shown in the illustration that follows. Prefer to run feeder cable as close as possible to the grounding bar — regardless if feeder is armored or unarmored.
- Don’t forget to make room for growth. Add additional 4-in. conduit and cap off the end(s) at the edge of or beyond the pad.
- Telect recommends anchors at all four corners. Upper end of anchor bolts must extend between 1¼ in. and 1½ in. above top of pad, grating, or platform.
- For outdoor deployment, Telect recommends that, in addition to the isolation pad provided with the cabinet, that the customer plan for and provide a suitable water-tight gasket between the bottom of the cabinet and the pad. Use the preceding illustration to mark and cut a rectangular hole for cable entrance.

Tools & Equipment —

No special tools required for installation.

INSPECTION

Telect is not liable for shipping damage.

Keep the container until you have checked equipment operation. If you experience any kind of problem, call Telect's Customer Service Department. Use the original, undamaged container if you are instructed to return a panel to Telect.

If a shipping container is damaged, keep it for the carrier's inspection. Notify the carrier and call Telect's Customer Service Department at **1-800-551-4567 or 1-509-926-6000**

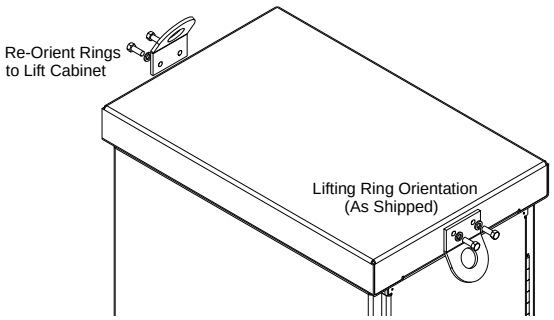
INSTALLATION PROCEDURE

Please read these instructions carefully before beginning installation. If you need assistance call Technical Support at 888-821-4856 (domestic calls), or 509-921-6161 (Option 2), or eMAIL us at getinfo@telect.com

1. Inspect equipment after unpacking and compare it to the packing list.

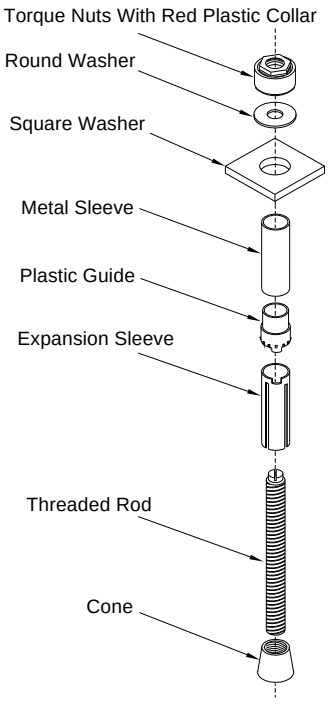
   Immediately report any shipping damage, defects, or missing parts to Telect at 1-800-551-4567. Keep all documentation that comes with your shipment.

2. Remove lifting rings at top of cabinet and then resecure as shown on the right.



3. Before moving cabinet, make sure the pad, grating, vault, or other support is ready: namely,
   - If installation includes a vault, make sure vault-to-cabinet adapter is in place.
   - If using Telect's seismic anchor kit (Model MDC-CBAK), install anchors, as follows:
     a. Drill an 18 mm ($^{25}/_{32}$-in.) diameter hole, 100 to 115 mm (4¼ to 4½ in.) deep, at each of the four anchor locations.
     b. Clean out holes using a shop vacuum, compressed air, or blow-out bulb. Clean away debris.
     c. Place round washer on rod and then thread torque nut onto the rod. The washer should touch the top of the metal sleeve.
     d. Insert anchor assembly (without the square washer) into hole. Tap anchor rod down with a hammer until washer touches the concrete.
     e. Pre-torque anchoring nuts to approximately 30 ft-lb (~40 N•m) using a ¾ in. (19 mm) socket or box wrench.

        Do not overtighten. Over-tightening will cause the torque nut to prematurely shear off from the plastic-encased holding nut.
     f. Remove torque nut and washer, leaving anchor and stud in place.
     g. For exterior installation on a concrete pad, place a water-tight gasket with cutouts for conduit and anchors on top of pre-installed pad.
4. If installation includes a base (recommended), proceed as follows:
   a. Place base over anchor studs, as shown in the following illustration.



Model MDC-CBAK Anchor Kit

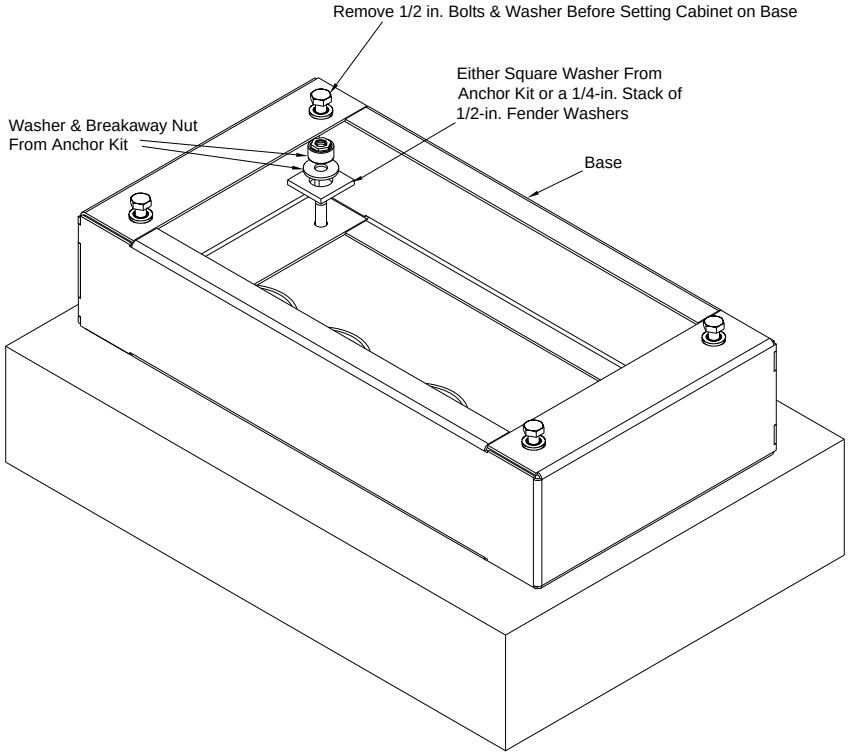
b. The front versus rear of the base are dimensionally alike and interchangeable. The top versus bottom are not.

c. Place square washer from the anchor kit over the studs.

d. If using a regular L-shaped concrete anchor, use a suitable nut and tighten all four corner anchors evenly to 38 ft-lb for ½-in. low-carbon steel studs and fasteners or 83 ft-lb for $^{3}/_{8}$-in. hardware.

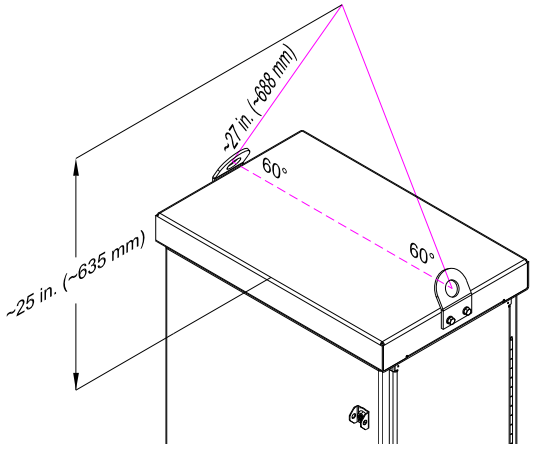
   If using a Telect anchor kit, tighten breakaway torque nut until it shears off plastic-encased holding nut. At shear point, the holding nut will be properly torqued to 60 ft-lb.

e. Remove and save four bolts and washers at top of base.



Installing a Base Using Telect Model MDC-CBAK Anchor Kit

5. Use the illustration on the right as a guide in designing a two-point lift for moving and placing cabinet over anchors.



ALERT

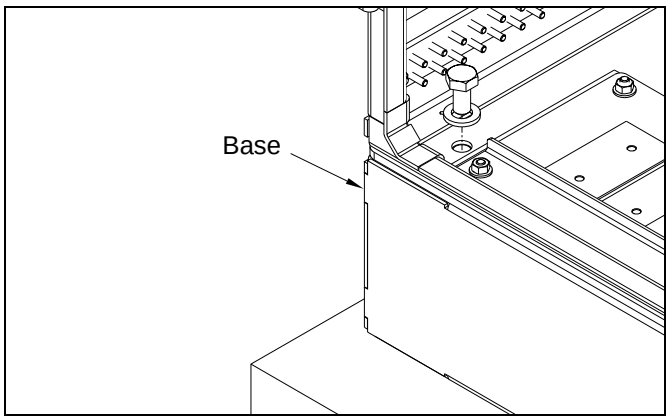
ALERT! DO NOT STAND BENEATH THE CABINET DURING LIFTING.

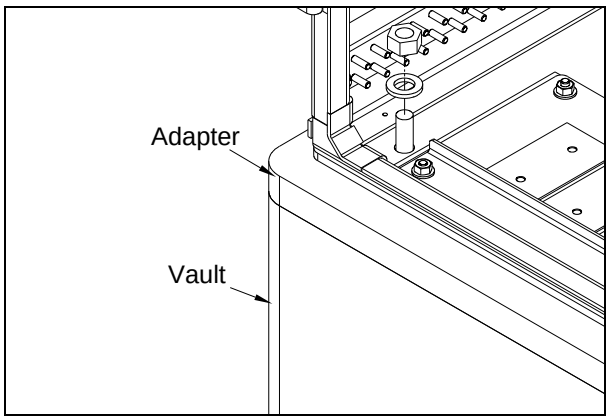
6. After moving cabinet into place over anchors, use the Allen-head-style key to open the doors.

7. Fasten cabinet to base or vault adapter, as shown in the following illustration.

   If fastening to a base, use the hardware removed in Step 4d.

8. Torque ½ in., low-carbon steel nuts/bolts to 38 ft-lb.





3. Cabling Without In-Cabinet Splicing

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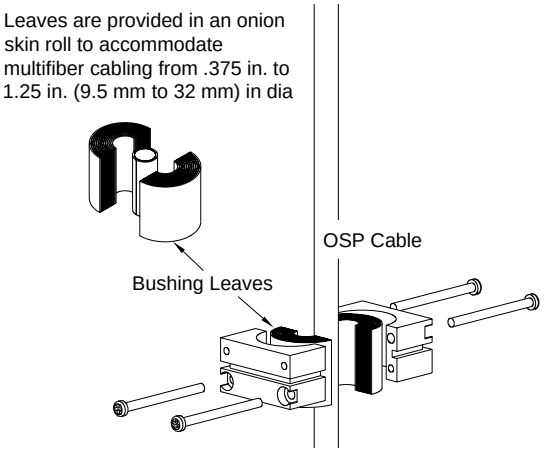
Fiber installation without in-cabinet splicing involves installing connectorized OSP feeder cables to the floor of the cabinet's rear compartment and then terminating those connectors at compartment interface adapters near the top of the cabinet. The connectorized distribution cabling is pre-terminated to the patch module assemblies at the factory. These optional patch module assemblies are secured to the cabinet partition. The distribution cables, like the feeder cables, are secured to the bottom floor of the rear compartment.

After installing all feeder and distribution cables at the cabinet end, the opposite ends are then spliced to OSP cables located in a splice enclosure.

Feeder Cable Installation

The cabinet accommodates up to 16 strands of connectorized OSP feeder cable. Telect supplies two cable clamps that accommodate cables between $^{3}/_{8}$ in. (9.6 mm) and $1^{1}/_{5}$ in. (30.5 mm) in diameter. Each clamp, shown on the right, uses several layers of gasket or bushing leaves to hold the cable fast between the two halves of the clamp.



OSP cable can be dry or wet, armored or unarmored. To connect to adapters in the cabinet the cable needs SC/APC connectors.

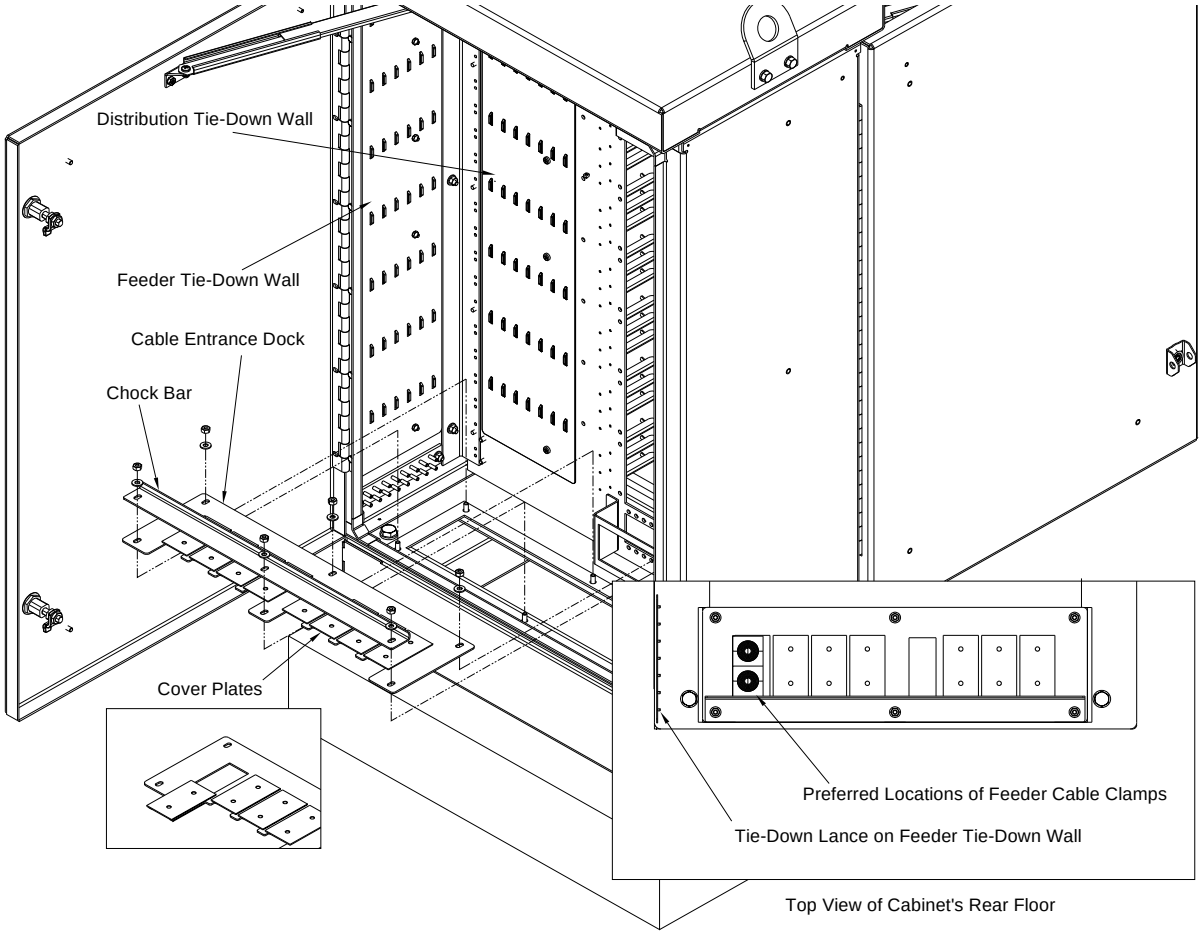
To install a feeder cable, proceed as follows:

1. Open rear door.
2. Remove cable entrance dock at bottom of cabinet by removing six sets of nuts and washers shown in the following illustrations.

   The cable entrance dock contains eight slots with slide-out cover plates. Each slots can accommodate two cable clamps for either feeder or distribution cable.

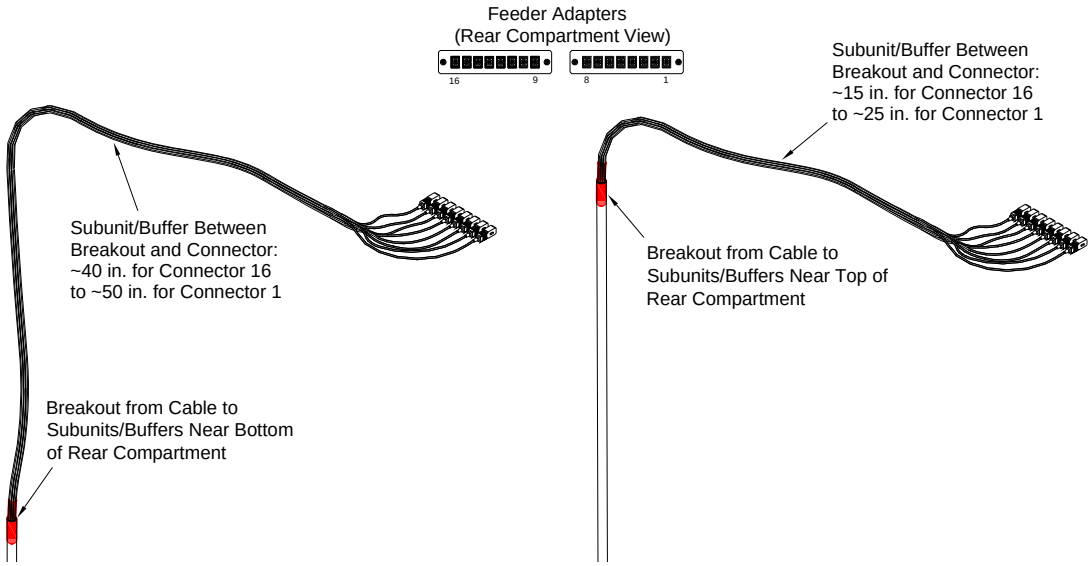
3. Slide out cover plate over feeder stub up.

   If all feeder cable enters through the stub up closest to the feeder tie-down wall, choose the slot nearest the tie-down wall. If a second feeder cable is being installed, prefer to locate both in the same slot.



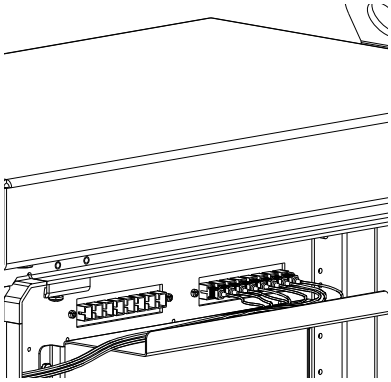
4. Use the next illustration to calculate the length of cable(s) required between the splice box (vault or aerial enclosure) and the feeder adapters near the top of the cabinet's rear compartment. Use heat-shrink tubing to secure the loose tubing at the end of the cable(s).

   The illustration shows approximate lengths of exposed subunits/buffers to accommodate the 900 µm fiber between the breakout and the SC/APC connectors. Any breakout length between 15 in. and 50 in. will fit: a short breakout length would place the breakout near the top of the feeder tie-down wall; conversely longer lengths would be tied down closer to the cable entrance.



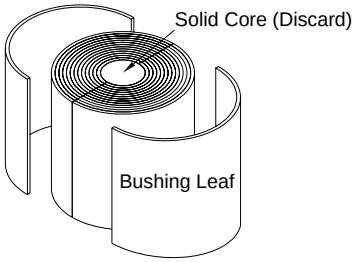
OSP Feeder Cable From Splice Enclosure (Dressed Out)

5. Feed opposite end of feeder cable(s) through stub-up conduit to splice vault or aerial enclosure. Before splicing, use cable ties “temporarily“ to hold the cable end(s) in the cabinet to convenient lance(s) along the feeder tie-down wall. Tie it down temporarily so that the SC/APC connectors will reach the feeder adapters at the top of the rear compartment.



6. Wait until all feeder cable is connected and secured in the cabinet before external splicing.
7. Connect SC/APC connectors on all feeder fibers to feeder adapters.
8. Measure diameter of cable(s) and remove and discard that much from the interior of the cable clamp’s leaf bundle equal to the diameter of the cable(s). The remaining leaves will be used between the clamp halves and the cable.
9. Nearby the cable entrance, where the cable entrance dock had been, loosely secure the left bundle(s) and clamp halves to the cable(s), as shown in the illustration at the start of this procedure.
10. Place cable entrance dock at bottom of cabinet and slip on cable clamps, as shown in the illustration on the following page.

    If you have only one feeder cable to install, you must use the other cable clamp to fill out the slot.



11. Hold down or temporarily fasten dock to cabinet, and then arrange feeder cable(s) and tubing along the feeder tie-down wall. Use cable ties generously to fasten cable and tubing to the wall.

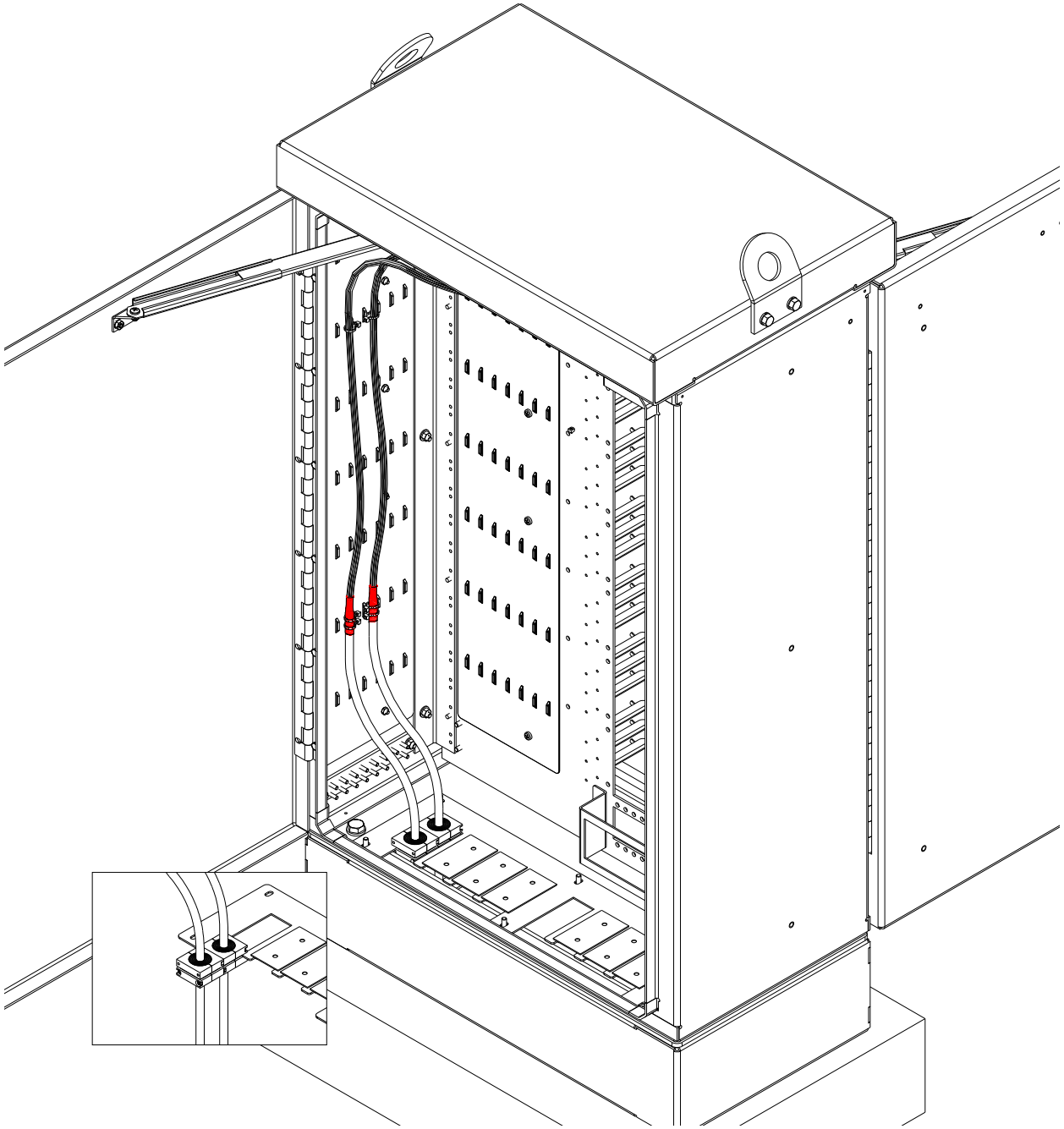
    Don’t use cable ties closer than ~1 ft (~300 mm) from the floor until all feeder and distribution cables are installed. You’ll need some wiggle room for removing/re-installing the cable entrance dock.

12. Remove the entrance dock again and securely fasten the cable clamps to the cable.

    You will fasten the entrance dock to the cabinet after the distribution cable is installed in the next subsection.

    A cabinet with feeder cable installed is shown on the following page.

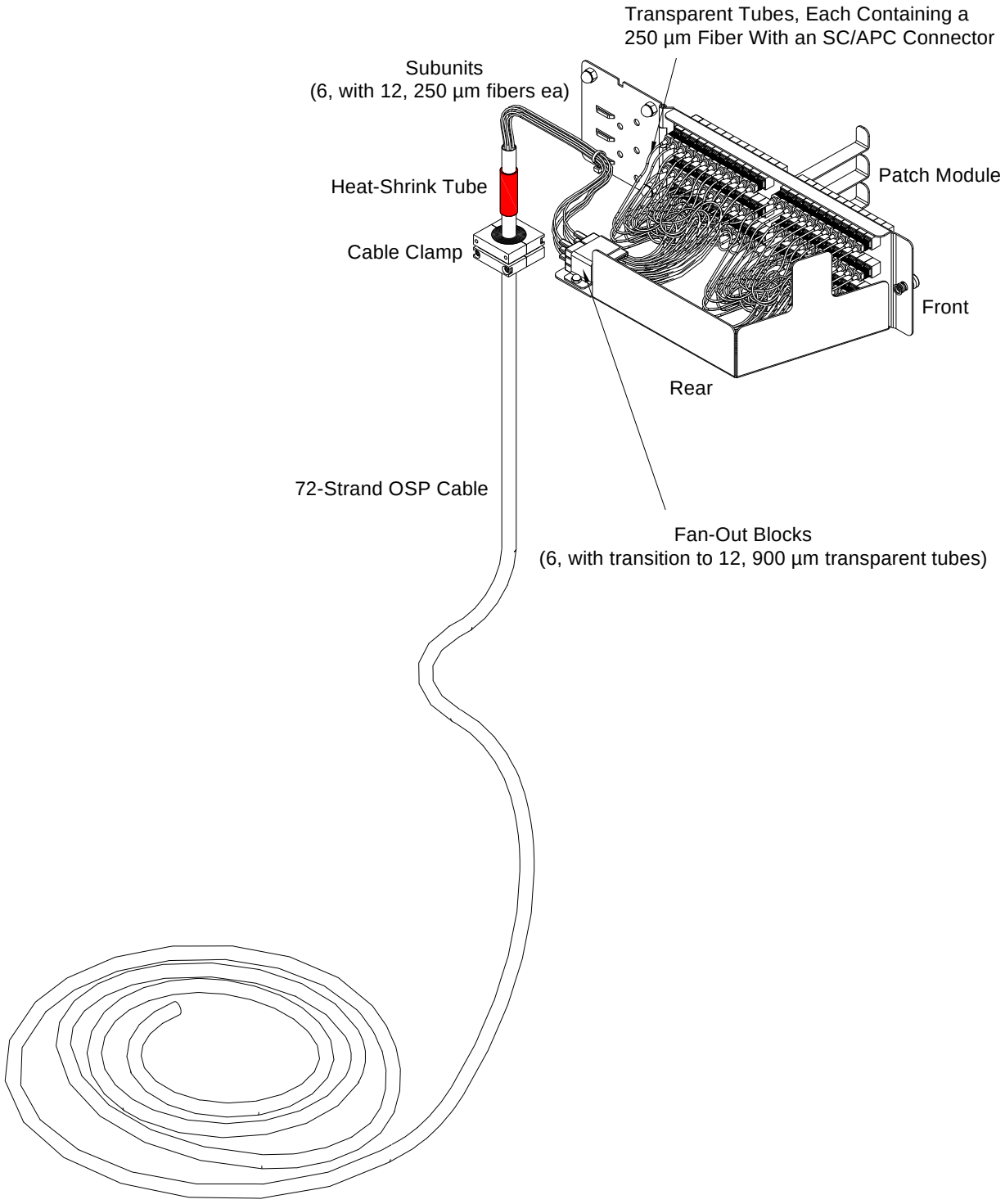
13. Splice the other end of the feeder cable.



Feeder Cable (Installed)

Patch Module & Distribution Cable Installation

Patch Modules come with a 72-strand distribution cable installed at the factory, as shown in the following illustration. The cable is a dry, unarmored cable containing 6 subunits each with 12, 250 µm fibers.



Patch Module With Distribution Cable

Telect offers a standard length of cable to fit most applications: 100 ft (30.48 m), measured from a fan-out block attached to the Patch Module to the stub end. (Custom lengths available on request.) Telect breaks out short lengths of subunits for the shortest probable distance from the cable clamp to the Patch Module. The subunit breakout can be increased on site. Telect includes the cable clamp for securing the cable to the bottom of the cabinet and a short length of heat-shrink tubing for covering the breakout.

The cable clamp, shown on Page 3-1, is the same type used to secure distribution cable. One cable clamps is provided. An additional cable clamp may be required to fill out the two-position entrance slot. (See “Standard Accessories” on Page 7-1.)

The fan-out block allows transition from the 250 µm fiber in subunits to individual connectorized fiber strands in 900 µm transparent tubes. Telect terminates the connector at adapter ports at the rear of the patch module.

To install a Patch Module with distribution cable, proceed as follows:

1. Open rear door.
2. Remove cable entrance dock at bottom of the cabinet, shown on Page 3-2.
3. Slide-out cover plate over distribution stub up(s).

   Patch Modules will be installed from the top position (Patch Module 1) to the bottom (Patch Module 6). Unless otherwise directed by operating company guidelines, prefer to start with the first distribution stub-up farthest from the patch module rack.

   Determine the length of the subunit breakout between the fan-out blocks on the edge of the patch module and the sheathed cable. The end of the sheathed cable will be either clamped and tied down on the distribution tie-down wall or at the cable clamp on the cable entrance dock.

   NOTE

   Telect only breaks out about 7 in. (~175 mm) of subunit. This would be for the shortest breakout from a cable clamp near the center of the cable entrance dock to Patch Module 6. The longest breakout would be about 64 in (~1600 mm) between a cable clamp near the left wall (viewed from the front of the cabinet) to Patch Module 1.

   All cables entering the cabinet directly below the patch module rack need to be broken out at the cable clamp. The cable is not flexible enough to manipulate it below the rack and around to the distribution tie-down wall. Conversely, all cables entering the cabinet directly below the distribution tie down wall should be extended up the tie-down wall and tied down just below a convenient breakout point. (Refer to the illustration on Page 1-4.)

4. Breakout subunits, heat shrink breakout, and then feed the opposite end of the cable into the distribution stub-up conduit.
5. Move the cable clamp down to approximately where the cable will enter the bottom of the cabinet.

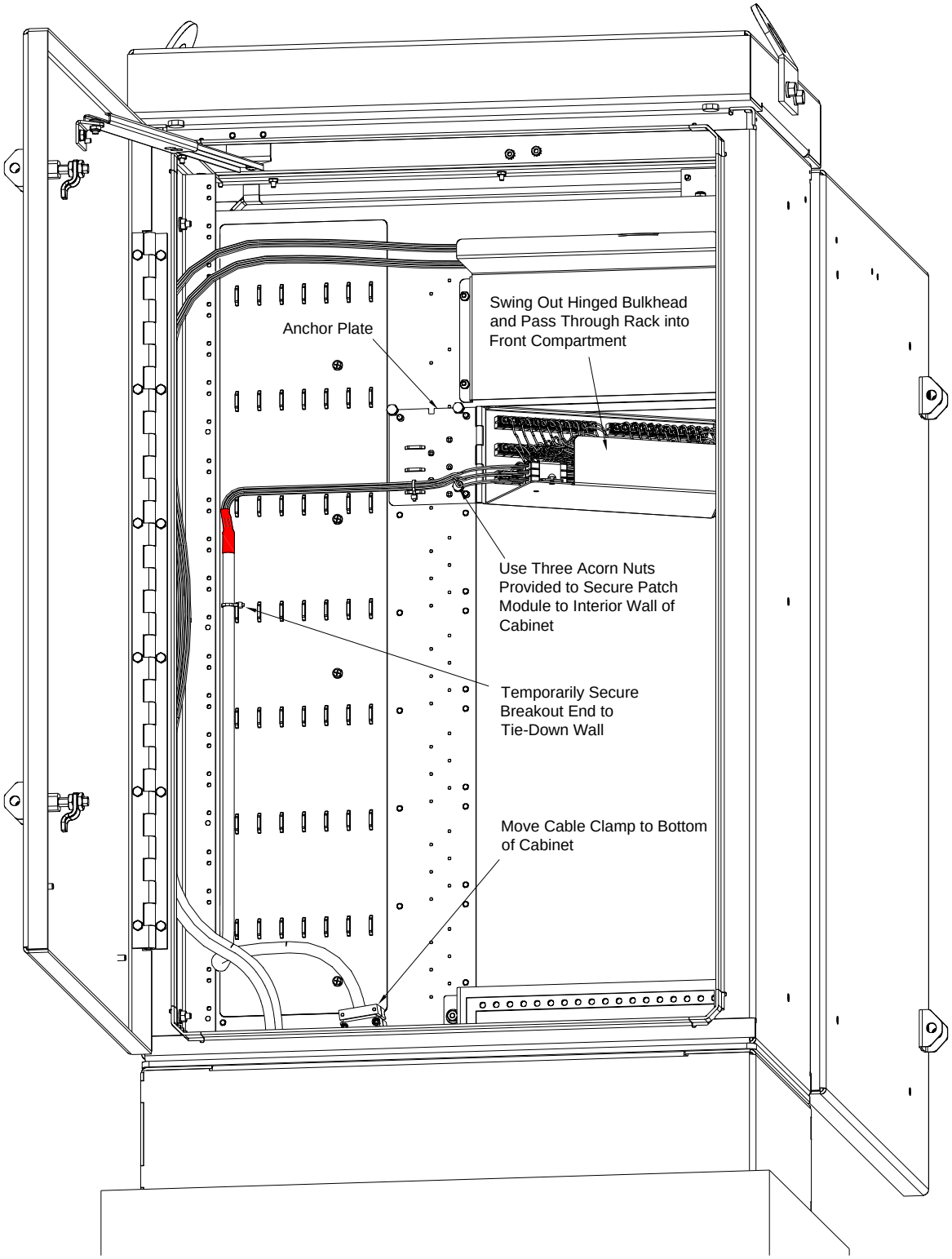
   NOTE

   Before connecting, splicing, storing, or parking distribution pigtails at the home, office, or node, install the Patch Module in the cabinet, as detailed in the following procedure. Refer to the following illustration.

6. If necessary, provide temporary strain relief while handling and installing Patch Module by, for example, loosely tying down the cable at a convenient lance along a tie-down wall.
7. Swing out hinged bulkhead from patch module’s anchor plate so that bulkhead fits through rack into front compartment. Then, secure anchor plate to partition wall using three acorn nuts provided.
8. Secure cable and subunit to distribution cable tie-down wall. Use plenty of cable ties.

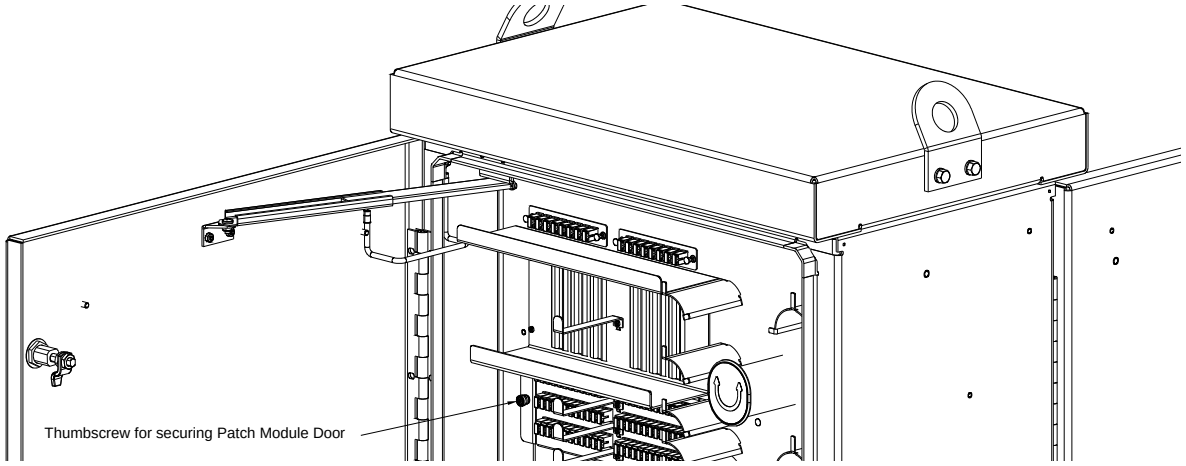
   Don’t use cable ties closer than about 1 ft (~300 mm) from the floor of the cabinet until all feeder and distribution cables are installed. You’ll need some wiggle room for re-installing the cable entrance dock.

9. At bottom of cabinet, adjust position of cable clamp in relationship to the cable entrance dock. Don’t secure the entrance dock until all scheduled distribution cables and Patch Modules are installed.

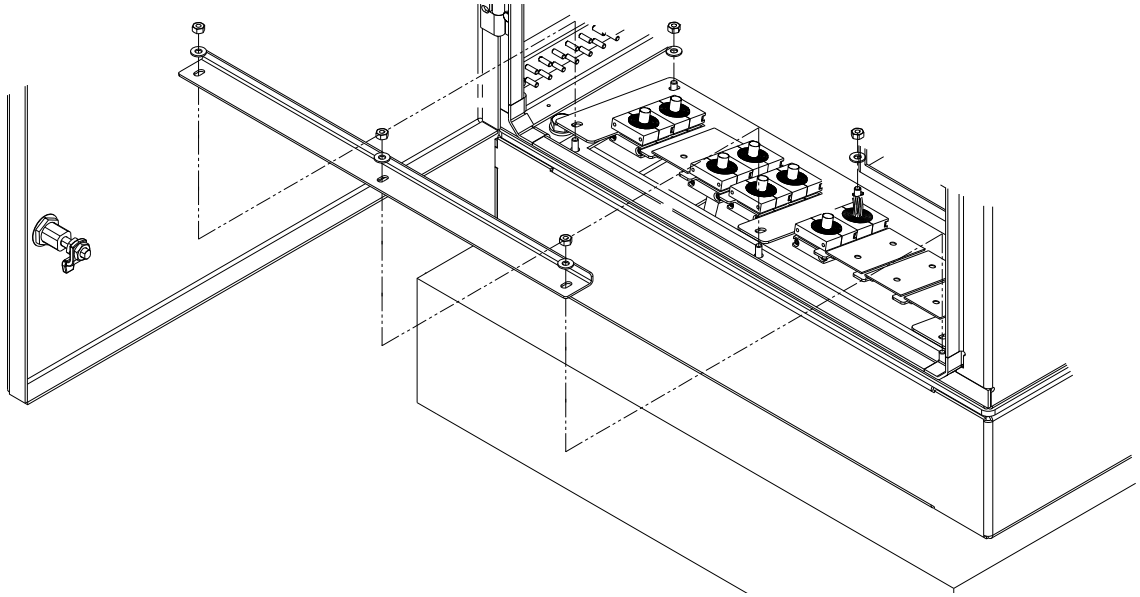


Installing a Patch Module

10. At front of cabinet, secure patch module swing-out door.



11. Repeat Steps 4 through 10 for the next Patch Module and distribution cable.
12. Continue so until all scheduled Patch Modules are installed.
13. Re-insert cable entrance dock: tilt it up as shown in the following illustration, and then slip the feeder and distribution cable clamps into the slots. Use extra clamps to fill out the slots containing only one cable.
14. Pivot the dock to the floor of the cabinet and re-install the chock bar. Push the chock bar against the cable clamps and secure.
15. Close the rear door.



Finishing Cable Installation

4. Cabling With In-Cabinet Splicing

WARNING

WARNING! Fiber cables transmit invisible infrared light. To avoid eye damage or blindness, never look directly into fibers or connectors.

WARNUNG! Faserkabel übertragen unsichtbares Infrarotlicht. Um eine Schädigung der Augen oder Blindheit zu vermeiden, schauen Sie nicht direkt in die Fasern oder Stecker.

ADVERTENCIA ! Los cables de fibra transmiten luz láser o infrarroja invisible. Para evitar lesiones oculares o ceguera, nunca mire directamente a las fibras o conectores.

AVERTISSMENT ! Les câbles à fibres transmettent un rayon laser ou une lumière infrarouge invisible. Pour éviter toute lésion occulaire ou cécité, ne regardez jamais directement dans les fibres ou dans les connecteurs.

Fiber installation with on-board cabinet splicing involves installing Telect's optional splice box and distribution patch modules in the rear compartment of the MDC-CB. The feeder and distribution cables are secured to the floor of the rear compartment. The installer routes the fiber breakout to the splice box where it's spliced to connectorized fiber. In turn, connectorized feeder and distribution fiber is routed and then terminated to the compartment interface adapters and distribution patch modules.

Splice Box Installation

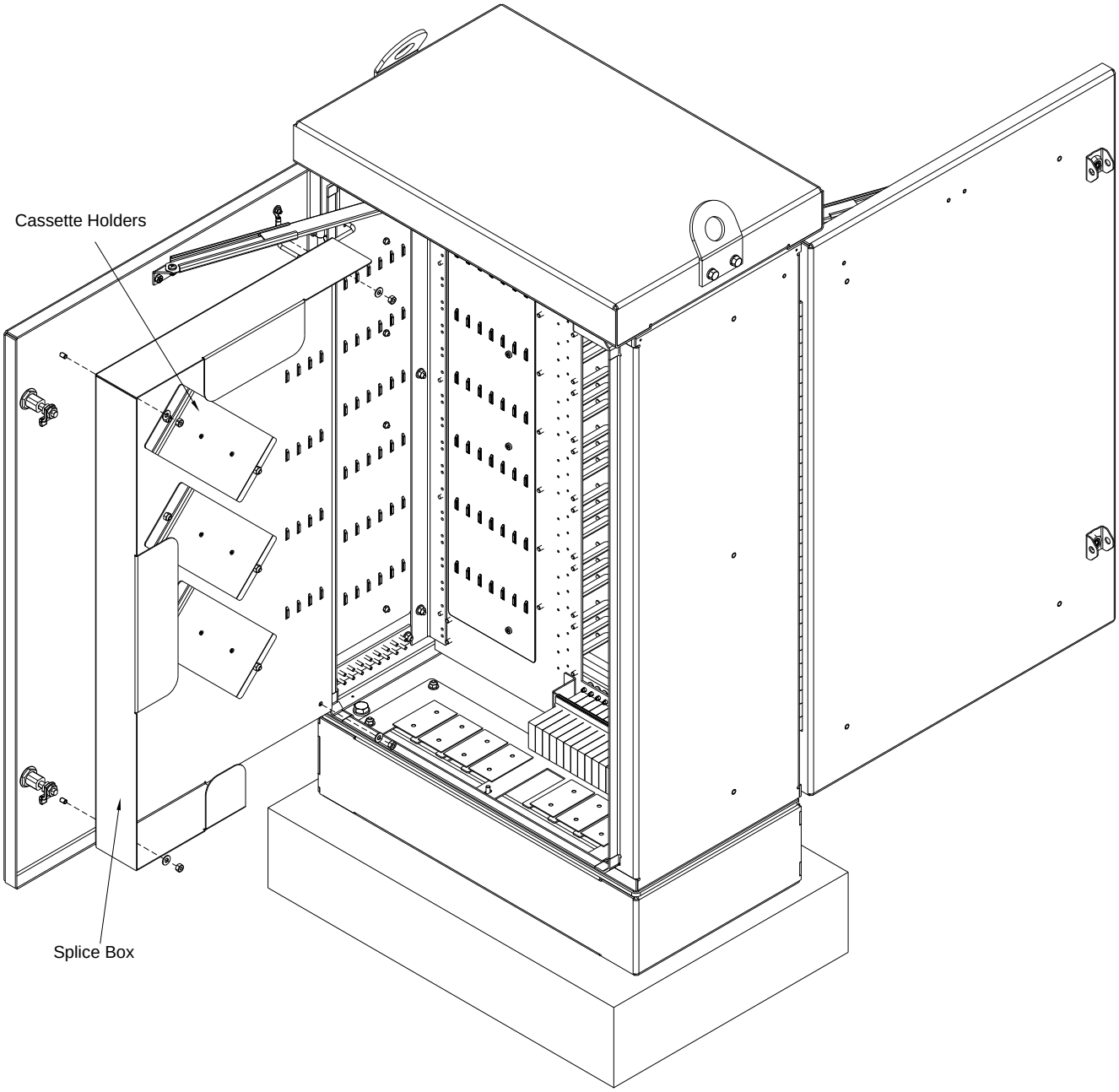
Install the Model MDC-SPLC Splice Box on the inside of the rear door using the hardware provided, as shown in the following illustration. (See "Accessories" Page 7-3.)

Patch Module Installation

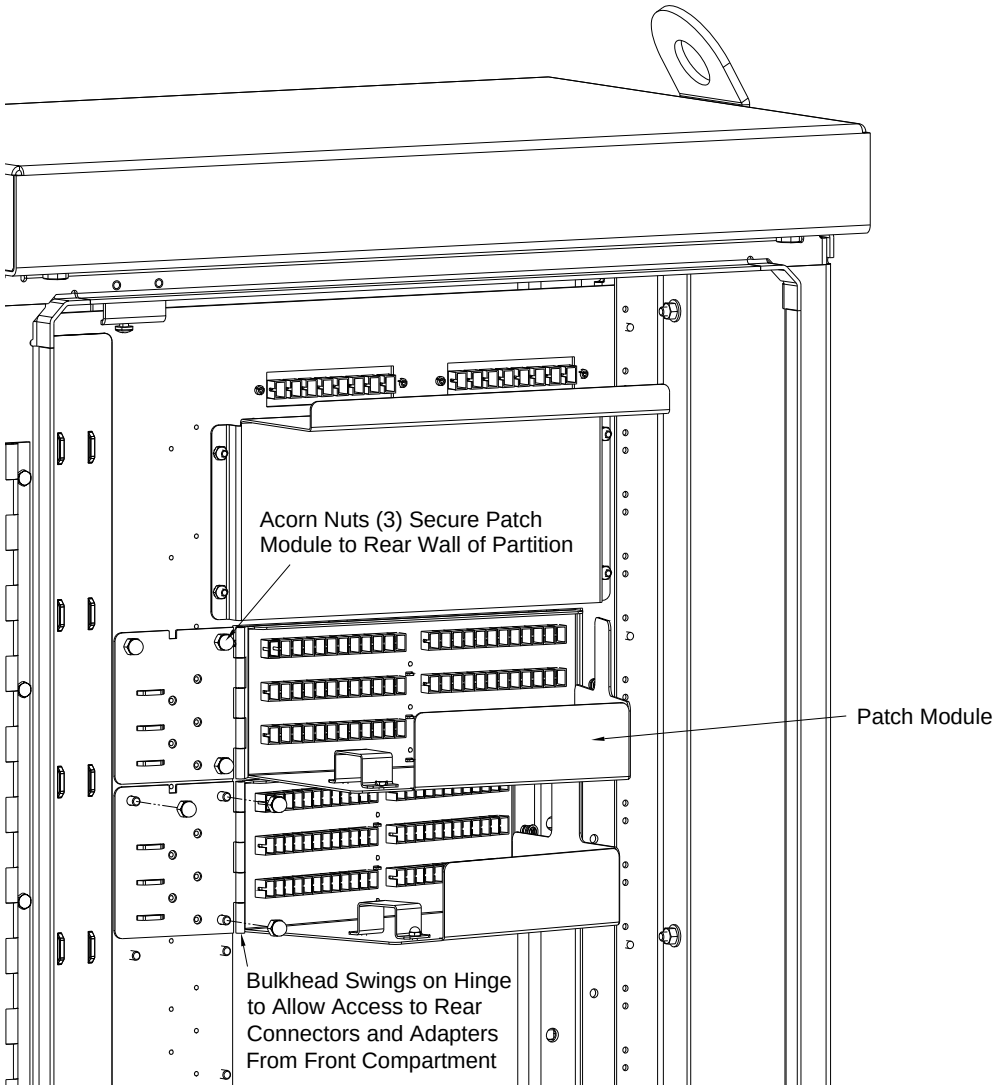
The Model MDC-P72N Patch Module is installed from and secured to the rear compartment. (See "Accessories" Page 7-3.)

To install, swing out the hinged bulkhead from the patch module's anchor plate so that the bulkhead fits through rack and into front compartment. (See the illustration on Page 4-3.) Then, secure anchor plate to partition wall using three acorn nuts provided. In the front compartment, secure patch module swing-out door.

Install all intended patch modules before installing any cable.



Installing Splice Box



Installing Model MDC-P72N Patch Module

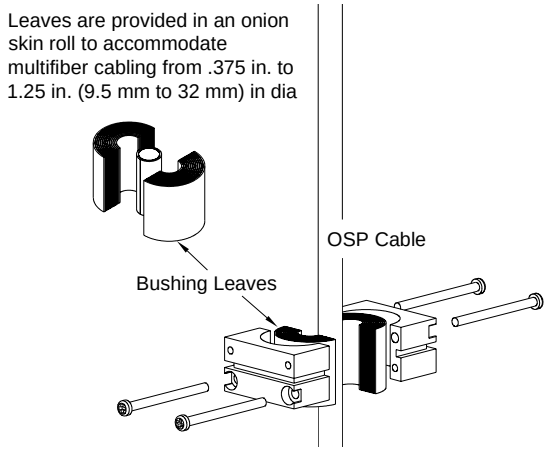
FEEDER CABLE INSTALLATION

The cabinet accommodates up to 16 strands of OSP feeder cable. Telect supplies two cable clamps that accommodate cables between $^{3}/_{8}$ in. (9.6 mm) and $1^{1}/_{5}$ in. (30.5 mm) in diameter. Each clamp, shown on the right, uses several layers of gasket or bushing leaves to hold the cable fast between the two halves of the clamp.

OSP cable can be dry or wet, armored or unarmored. To connect to adapters in the cabinet the incoming feeder fiber needs to be spliced to fiber strands with SC/APC connectors.

To install a feeder cable, proceed as follows:

1. Open rear door.



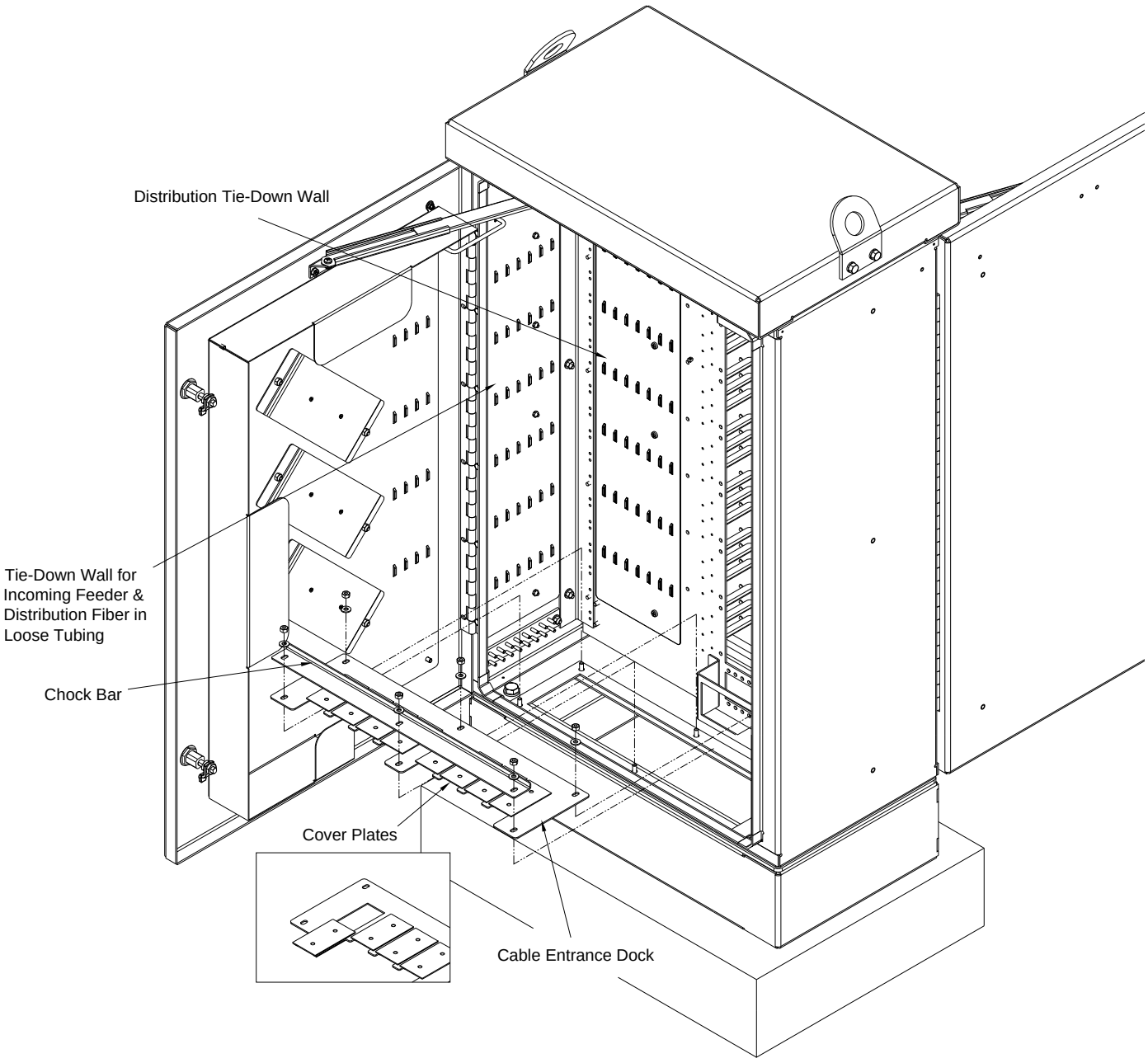
2. Remove cable entrance dock at bottom of cabinet by removing six sets of nuts and washers shown in the following illustrations.

   The cable entrance dock contains eight slots with slide-out cover plates. Each slots can accommodate two cable clamps for either feeder or distribution cable.

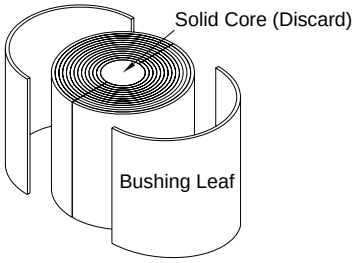
3. Slide out cover plate over feeder stub up.
4. Fish feeder cable into cabinet and then remove at least 15 ft (~5 m) of sheathing from the cabinet end.

NOTE

15 ft allows the feeder fiber to reach the furthest splice cassette. Break out more buffer/subunit if you intend to splice anywhere but at ground level at the open rear door. Add multiples of 8½ ft (~2.5 m) when adding to this length if the splicing is done, for example, in a vehicle. The multiple represents the perimeter around the splice box for storing the excess length of tubing.

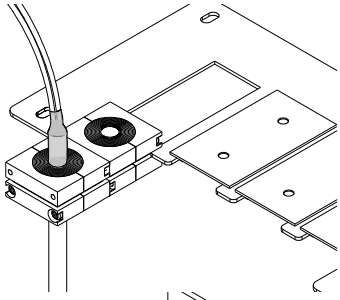


5. Carefully remove buffer/subunit tubes from the 15-foot unsheathed end and place fiber into 3-m radius-control (bend limiting) loose tubing. Use heat-shrink tubing to hold loose tubing to sheathed end of feeder cable.
6. Measure diameter of cables and remove and discard that much from the interior of the cable clamp's leaf bundle equal to the diameter of the cables. The remaining leaves will be used between the clamp halves and the cable.



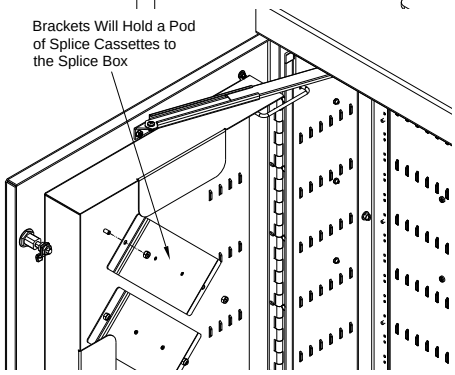
7. At end of heat-shrink on cable, loosely secure the leaf bundle(s) and clamp halves to the cable(s), as shown in the illustration at the start of this procedure.
8. Place cable entrance dock at bottom of cabinet and slip on cable clamps, as shown on the right.

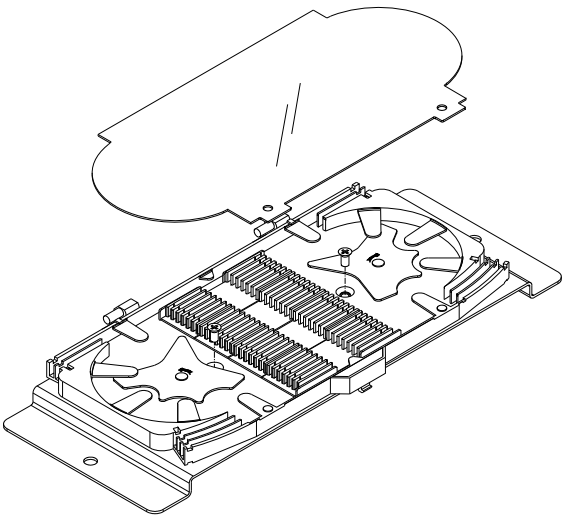
   If you have only one feeder cable to install, you must use the other cable clamp to fill out the slot.



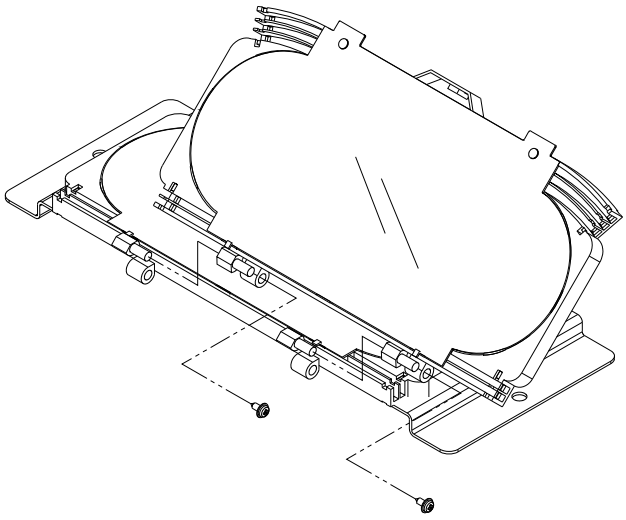
9. Hold down or temporarily fasten dock to cabinet.
10. Remove top cassette holder on splice box, as shown on the right. Save the two nuts
11. Place holder on a splice cart or other convenient work surface.
12. Remove and save two screws near center of holder.
13. Remove transparent cover of cassette.
14. Use the two screws to secure the first (bottom most) splice cassette to the bracket, as shown in the next illustration.
15. Add more cassettes, as shown.

    Each plastic cassette has molded in pairs of male and female hinge halves. The female part of the hinge of the top cassette mates with the male part on the cassette below. Two collar screws, supplied with each cassette, secure the hinge.





First Cassette



Adding Cassettes

Installing Cassettes

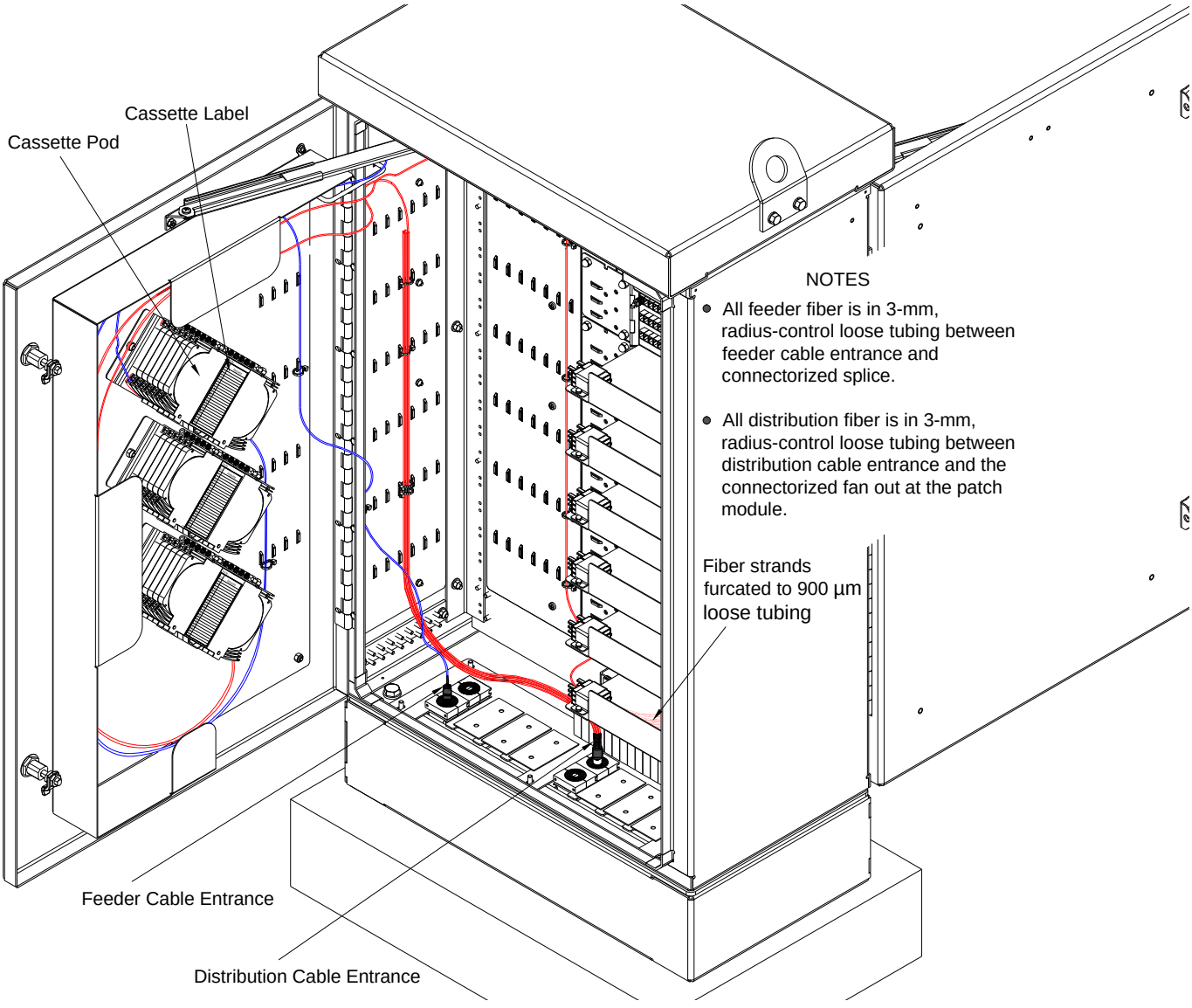
NOTE

How many cassettes to place on each holder depends on how many feeder and distribution fiber pairs require splicing. If you intend to accommodate 16 (max.) signals from the CO and up to 432 (max.) from the distribution, you need a total of 19 cassettes: one for the feeders and 18 for the distribution. It's wisest to arrange cassettes more or less evenly among the holders. It's also wisest to add all intended cassettes to the stack before running loose tubing and splicing any of the cassettes.

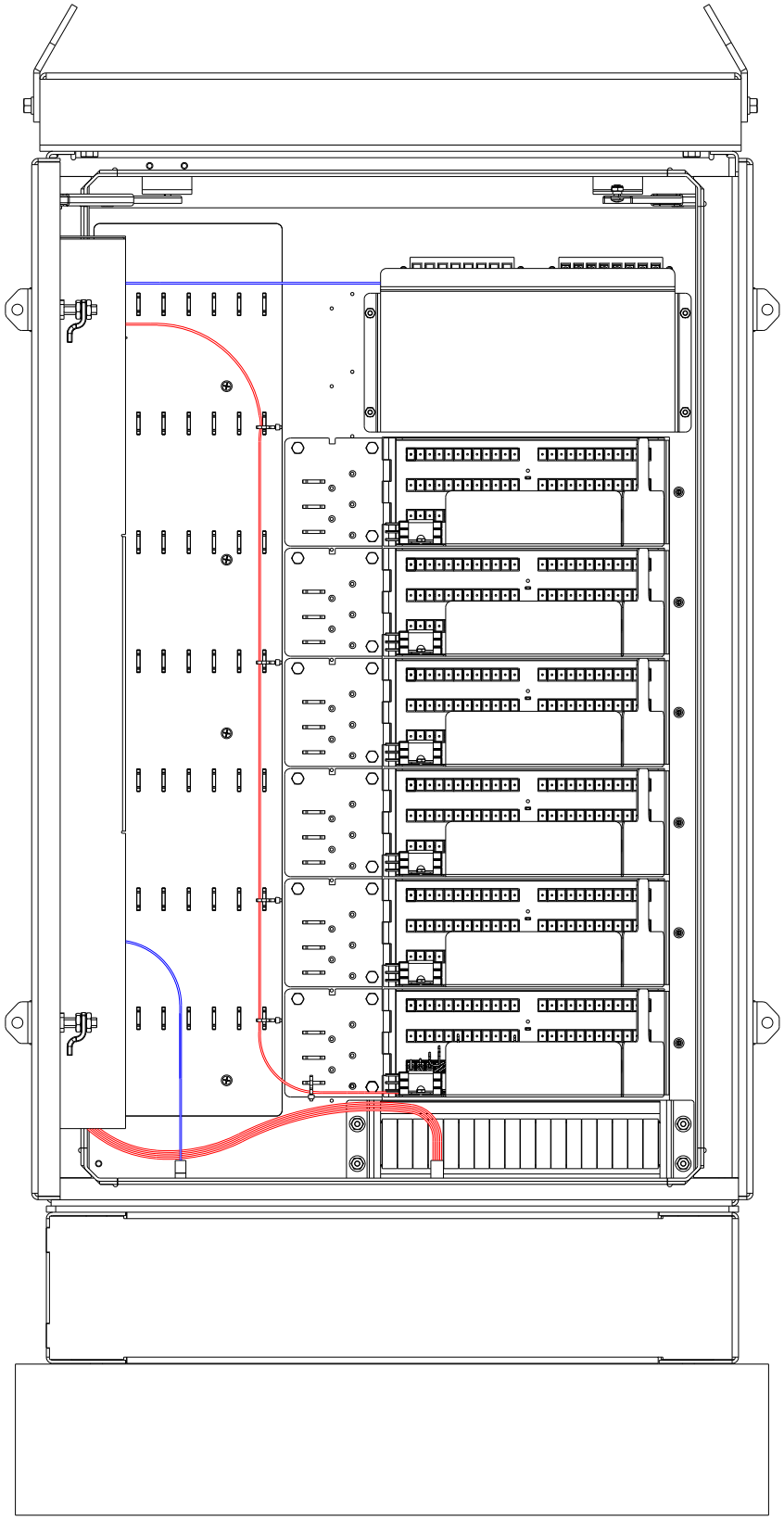
Normally, each cassette holds up to 24 splices. If desired, up to 48 splices will fit each cassette in two layers of 24 — 24 lower and 24 upper. Two layers makes for a crowd cassette, however, but lessens the number of cassettes overall.

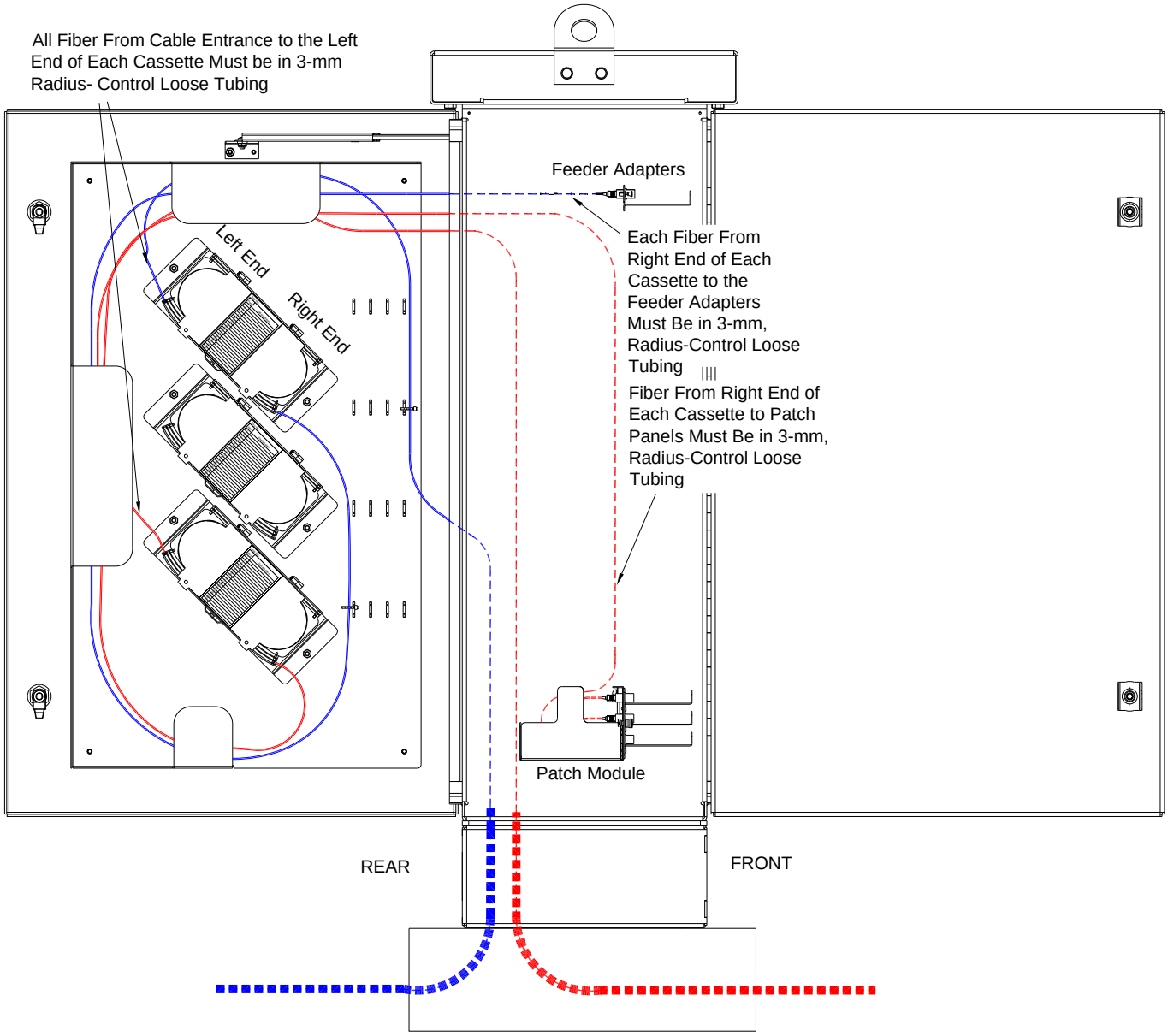
16. After completing a stack of cassettes (a cassette pod), check the length of loose tubing required to reach the cassette. The following illustrations show the shortest and longest required paths for tubing.

    The distance between the feeder cable breakout at the cable entrance and the cassette entrance will vary from 5 to 8 ft (~1.5 to ~2.5 m) depending on the starting and ending points in the cabinet and on the door. Check the distance and add in multiples of 8½ ft (~2.5 m), if desired, and then carefully cut off the excess tubing, being mindful of the fiber strands within. DON'T CUT THROUGH THE FIBER because you will need an additional 3 ft (~1 m) beyond that point for the unprotected strands which will be in the cassette. So, 3 ft (~1 m) passed the end of the loose tubing, cut away the excess fiber.



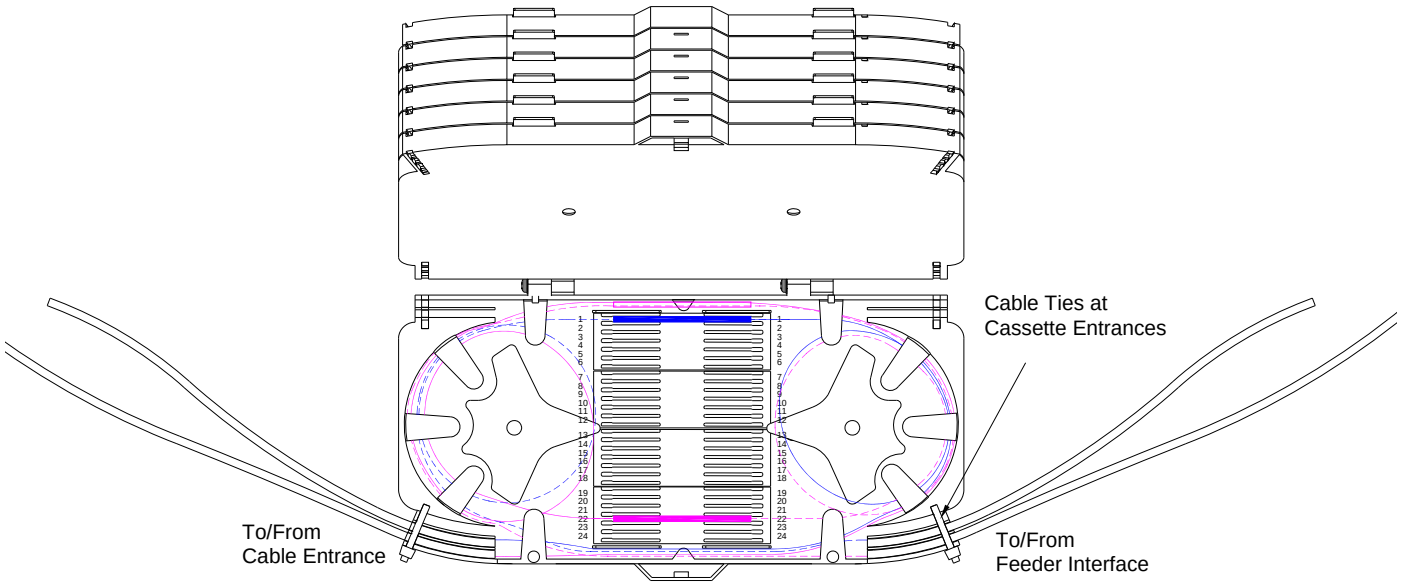
Routing Feeder & Distribution Loose Tubing (Overall View)





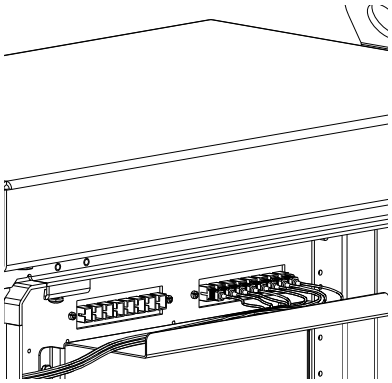
Routing Feeder & Distribution Loose Tubing (Left View of Rear Door)

17. Feed connectorized feeder interface fiber through loose tubing.
18. Secure ends of both feeder tubes at opposite entrances to the cassette, as shown in the following illustration.
19. Route fiber around the perimeter, trim excess, slip on heat-shrink fusion splice sleeve, and splice all fibers from the installed tubes.
20. Record terminations on designation label included with cassette.
21. Finish all feeder splices before installing and splicing distribution fiber.



Routing Fiber in a Cassette

22. Apply the designation label to the cassette cover and connect ends of fiber into adapters on the feeder interface shown on the right.
23. Continue with “Distribution Cable Installation” in the next section before installing the pod on the door and before securing tubing to the cabinet and door. Do not mix feeder and distribution splices in the same cassette.



Distribution Cable Installation

The cabinet accommodates up to 432 strands of OSP distribution cable.

Telect does not include cable clamps for the distribution cable. The cable clamps are the same type used for the feeder cables. See “Accessories” on Page 7-2.

Like the feeder cable, OSP distribution cable can be dry or wet, armored or unarmored. To connect to adapters in the patch module, the incoming distribution fiber needs to be spliced to fiber strands with SC/APC connectors.

The breakout, splicing, and routing of distribution is similar to that of the feeder. In brief,

1. As before, remove at least 15 ft (~2.5 m) of sheathing from the distribution cable entering the cabinet. More, if desired, in 8½ ft (~2.5 m) increments. Also remove the buffer/subunit tube covering the fiber and slip on 3-mm, radius control loose tubing.
2. Heat shrink tubing to cable at entrance dock and then attach a cable clamp
3. Check the length of loose tubing required for the run between the cassette and the fan-out block on the patch module.

   The distance will vary from 6¾ to 9¾ ft (~2 to 3 m) depending on the starting point on the door and the location of the patch module. Check the distance and add in multiples of 8½ ft (~2.5 m), if desired, to determine tubing length. For the fiber, you will need this length plus an additional 4 ft (~1.25 m) beyond that point for the unprotected strands which will be in the cassette and for the fiber from the entrance of the fan-out block to the adapter on the patch module.

4. For each loose tube of 12 fibers, you will need a fan-out block to adapt the fiber in one loose tube to individual fibers in a 900 µm loose tubes.

To use the fan-out block, proceed as follows:

a. The furcation block has about 1.5 m (~5 ft) of transparent tubing for 900 µm fibers. Cut the transparent tubing back to 11½ in.(~300 mm).

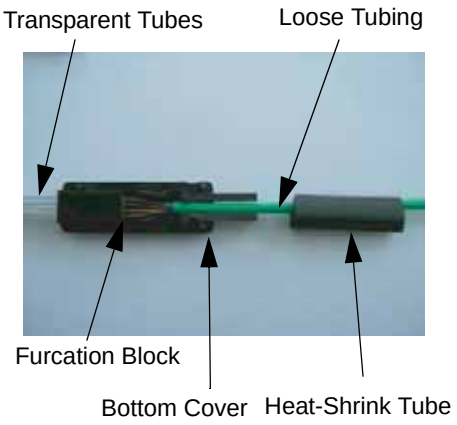
b. Slip the fibers through the furcation block and transparent tubes and move the ends of the transparent tubes up to the SC/APC connectors.

c. Next, slip on the heat-shrink tube supplied with the fan-out kit

d. Place the furcation block onto the bottom cover.

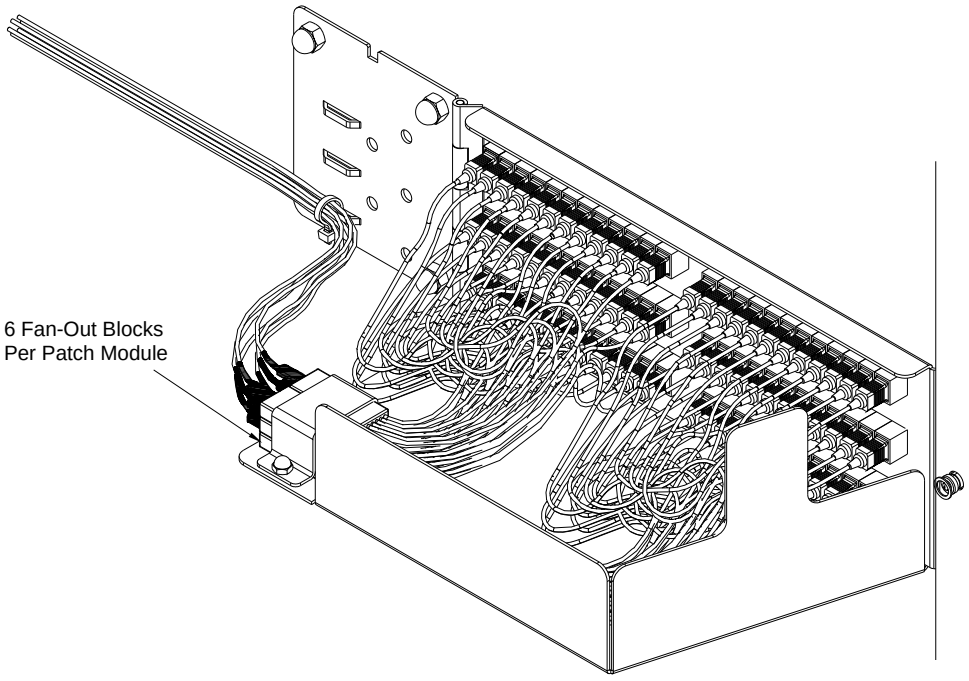
e. Snap on the top cover.

f. Slide up the heat-shrink tube against the block and heat shrink.



5. Secure ends of both distribution tubes at opposite entrances to the cassette, route fiber throughout cassette (Page 4-9), trim excess, slip on splice sleeve, and splice.
6. Record terminations on designation label included with cassette.
7. Finish all splices in a cassette before moving to the next.
8. Continue with the remainder of the fibers from the distribution cable — splicing them to connectorized fibers — before moving to the next cable.

   After every 72 fibers (6 fan-out blocks), connect ends of fiber into adapters on the patch module, shown in the following illustration. Use the bracket provided on the patch module to secure the fan-out blocks to the patch module chassis.

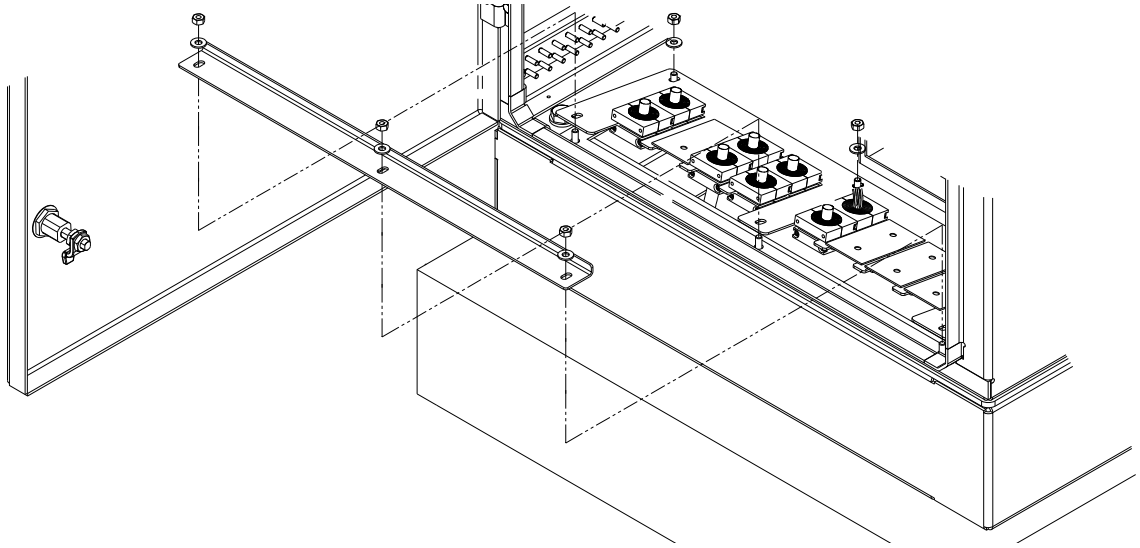


9. Complete all cassettes in a pod before mounting the pod to the rear door and before routing the loose tubing.

Routing Feeder & Distribution Loose Tubing

When completed and before moving to the next cassette pod,

1. Install completed cassette pod on the rear door.
2. Route all loose tubing as planned and use cable ties liberally to secure tubing to lances on door and in cabinet.
3. After all feeder and distribution cabling and loose tubing has been installed, spliced, and routed, re-insert cable entrance dock, tilt it up as shown in the following illustration, and then slip the feeder and distribution cable clamps into the slots. Use extra clamps to fill out the slots containing only one cable.
4. Pivot the dock to the floor of the cabinet and re-install the chock bar. Push the chock bar against the cable clamps.
5. Secure the chock bar and close the rear door.



5. Cross Connections

WARNING

WARNING! Fiber cables transmit laser or invisible infrared light. To avoid eye damage or blindness, never look directly into fibers or connections.

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ADVERTENCIA ! Los cables de fibra transmiten luz láser o infrarroja invisible. Para evitar lesiones oculares o ceguera, nunca mire directamente a las fibras o conectores.

AVERTISSMENT ! Les câbles à fibres transmettent un rayon laser ou une lumière infrarouge invisible. Pour éviter toute lésion occulaire ou cécité, ne regardez jamais directement dans les fibres ou dans les connecteurs.

ALERT

ALERT! This product must be installed and maintained by qualified technicians.

After installing all feeder and distribution cabling in the rear compartment, close the rear compartment. All subscriber changes are done in the front compartment. First, however, the high-intensity feeder signals needs to be split before cross connecting to the distribution.

Telect Splitter Modules are installed, interconnected to the incoming feeder fiber, and cross connected to distribution fiber in the front compartment. After installing OSP cable, the rear compartment need not be re-opened.

Telect manufactures four Splitter Module configurations for this cabinet: 1 x 4, 1 x 8, 1 x 16, and 1 x 32.

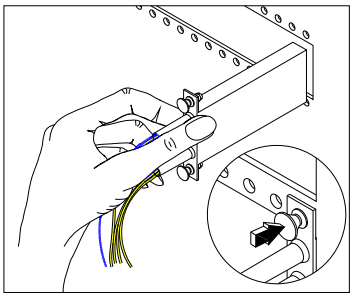
To install a Splitter Module, proceed as follows:

1. Start at Splitter Position 18 on the right and insert module in splitter bulkhead near bottom of front compartment.
2. As shown in the illustration on the right, push in the two plunger-style latches to secure the module.

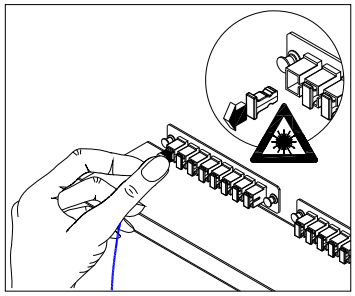
   The splitter module has one blue 2-mm jumper for the feed-in and 4, 8, 16, or 32 yellow 2-mm jumpers for the distribution. All splitter jumpers are 2.1 m in length.

3. Route the blue jumper to the first feeder adapter on the left at the top of the front compartment, as shown in the illustration on the right.

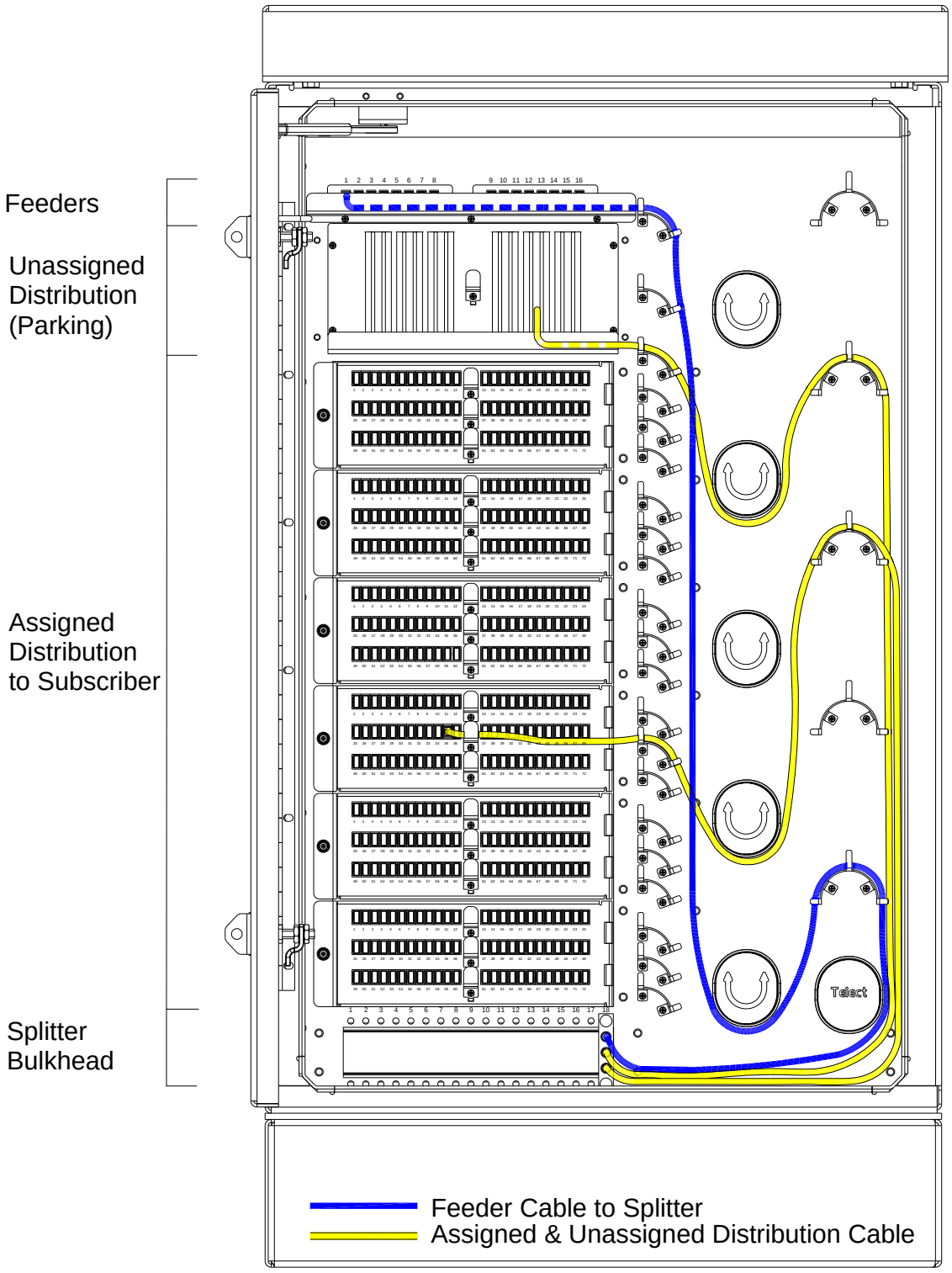
   Going from right most splitter module to left most feeder adapter guarantees that the blue jumpers from all splitter modules will neatly fit the same pathway around the routing arcs and spools in the right half of the compartment. Prefer to route the blue jumpers as shown in the following illustration, that is, around the bottom, right most spool, up to the nearest arc, down around the bottom most spool to the left of the other, and on up to the feeder bulkhead.



Installing Splitter Module



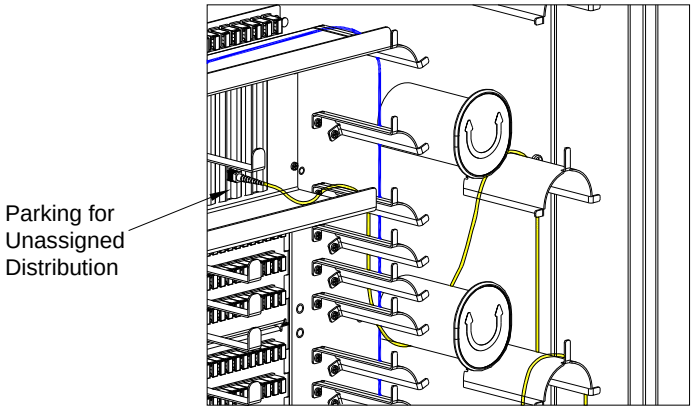
Connecting to Feeder



Distribution Routing

4. Now route the yellow jumpers for assigned and unassigned distribution:
   - For assigned distribution (connecting to a subscriber), route the cables to the right, around the right most spool at the bottom, and then up to and around one of the four arcs directly above, as shown in the illustration. Pick one of the arcs above the intended patch. (Always reserve the top most arc and spool for as yet unassigned cable and for dropped subscribers.)

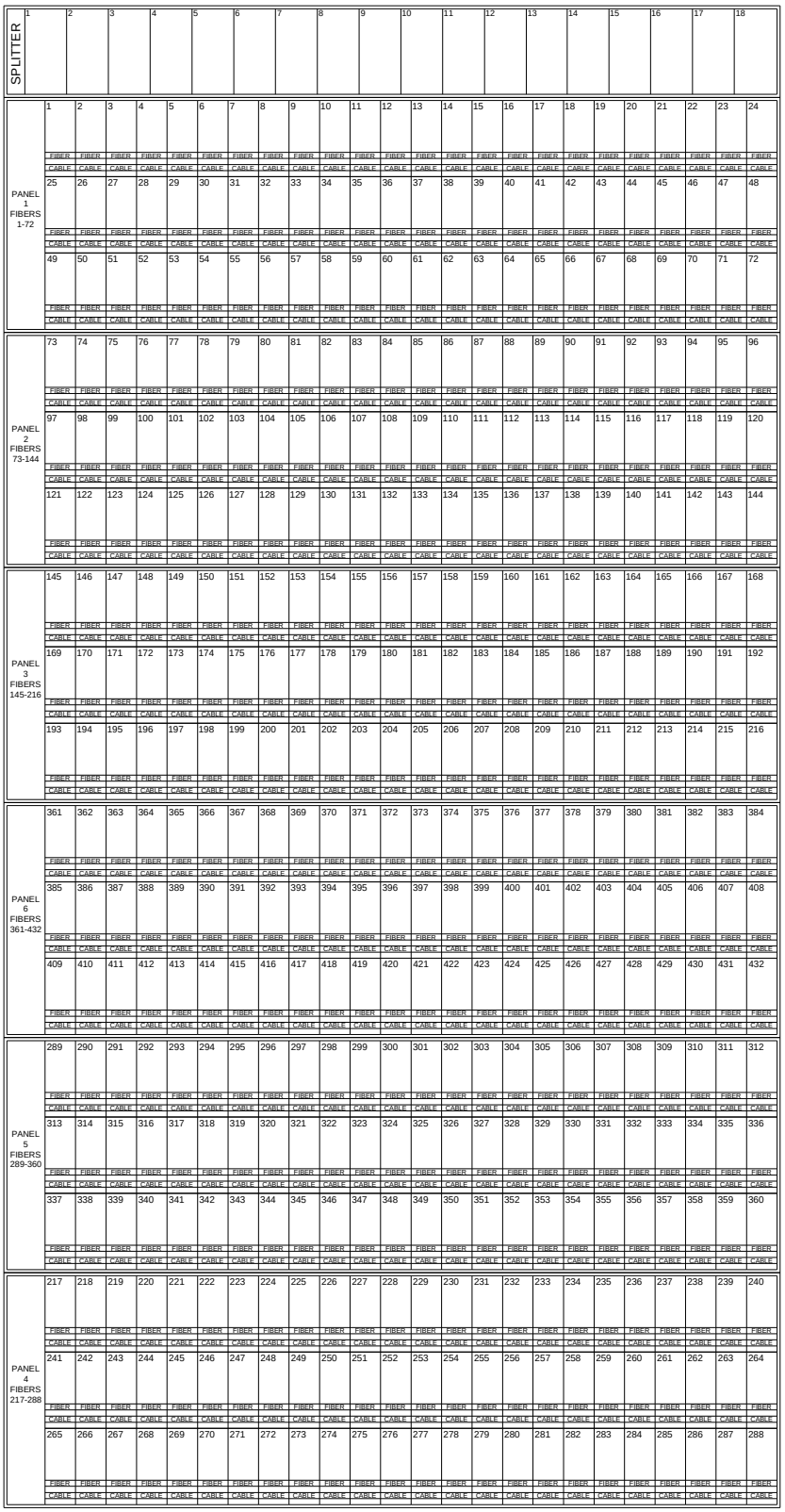
- For unassigned distribution or for disconnected subscribers, route the cable up and around one of the top two arcs and spools and then plug the connector (with dust cover attached) into one of the rubber holders between the feeders and the Patch Modules, as shown in the illustration.



Parking Unassigned Distribution Jumpers

5. Record splitter and subscriber assignments on the erasable label applied to the inside of the front door.

   A replica of the designation label is shown in the following illustration.



Designation Label

6. Service

WARNING

WARNING! Fiber cables transmit laser or invisible infrared light. To avoid eye damage or blindness, never look directly into fibers or connections.

WARNUNG! Faserkabel übertragen unsichtbares Infrarotlicht. Um eine Schädigung der Augen oder Blindheit zu vermeiden, schauen Sie nicht direkt in die Fasern oder Stecker.

ADVERTENCIA ! Los cables de fibra transmiten luz láser o infrarroja invisible. Para evitar lesiones oculares o ceguera, nunca mire directamente a las fibras o conectores.

AVERTISSMENT ! Les câbles à fibres transmettent un rayon laser ou une lumière infrarouge invisible. Pour éviter toute lésion occulaire ou cécité, ne regardez jamais directement dans les fibres ou dans les connecteurs.

ALERT

ALERT! This product must be installed and maintained by qualified technicians.

Technical Support

By e-mail: getinfo@telect.com
By phone: 888-821-4856 or 509-921-6161

In-Warranty Service

Contact your Telect equipment distributor, or call a Telect Customer Service Representative:

1-800-551-4567
1-509-926-6000

Telect will repair or replace defective products within the limits of the warranty. See “Repacking for Shipment” in this section.

NOTE

Call a Customer Service Representative for a Return Material Authorization (RMA) before returning any equipment.

Out-Of-Warranty Service

The procedure for out-of-warranty service is the same as for in-warranty service, except that Telect charges a processing fee, and you must submit a Purchase Order along with a Return Material Authorization (RMA) before returning equipment. Call a Customer Service Representative for help getting these forms.

The processing fee guarantees a repair estimate and is credited against actual material and labor costs.

Repacking For Shipment

1. Tag the equipment showing owner's name, address, and telephone number, together with a detailed description of the problem.
2. Use the original shipping container if possible. If you do not have it, package the equipment in a way to prevent shipping damage. Include the RMA inside the container and legibly print the RMA number on the outside of the package, near the shipping address.
3. Insure the package.

NOTE

Telect is not liable for shipping damage.

Cleaning Patch Module Connectors & Adapters

The Patch Module adapters are mounted to a hinged bulkhead to allow access to both connectors on opposite sides of the adapters without having to open the rear cabinet door.

The performance of Patch Module optical fiber connectors or adapters depends, to a large degree, on the cleanliness of the connectors and adapters at the time of connection. To thoroughly clean connectors and adapters[1], proceed as follows:

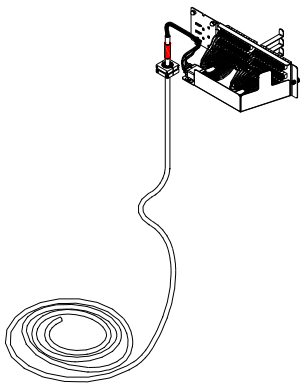
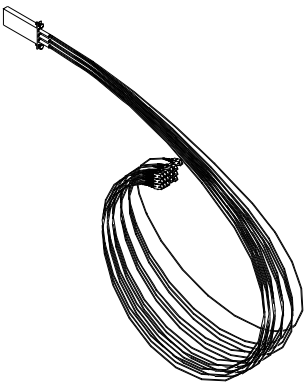
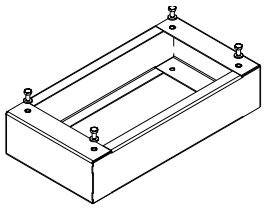
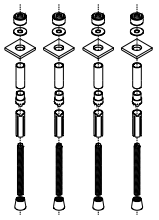
1. If both connectors have been removed from the adapter, blow compressed gas[2] through the adapter.
2. Wipe completely around the ferrule of the connector twice with a lint-free wiping material that has been moistened with reagent-grade ethyl alcohol, nominal USP $\geq$ 99%.
3. Repeat Step 2 with a dry wipe.
4. Blow compressed gas across the end of the ferrule. This is the final step before inserting the connector. Do not wipe the ferrule or allow it to touch anything after completion of this step.
5. Insert connector into adapter.
6. Repeat Steps 2 through 5 for the other connector.

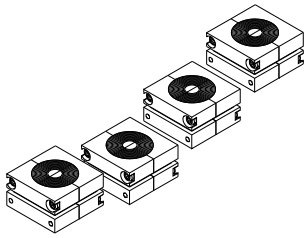
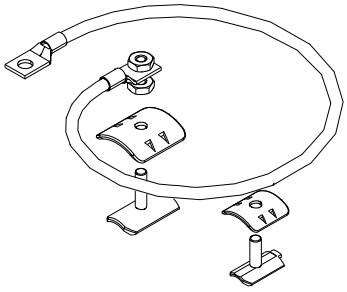
1. Procedure is adapted from GR-326-CORE, Issue 3, Sept 1999, Section 4.3.
2. Compressed air or canned compressed gas that is clean, dry, and oil-free.

7. Accessories

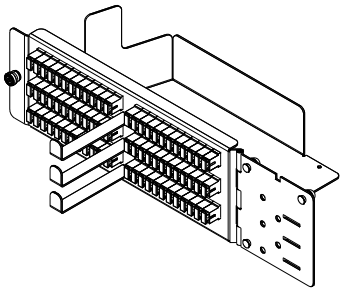
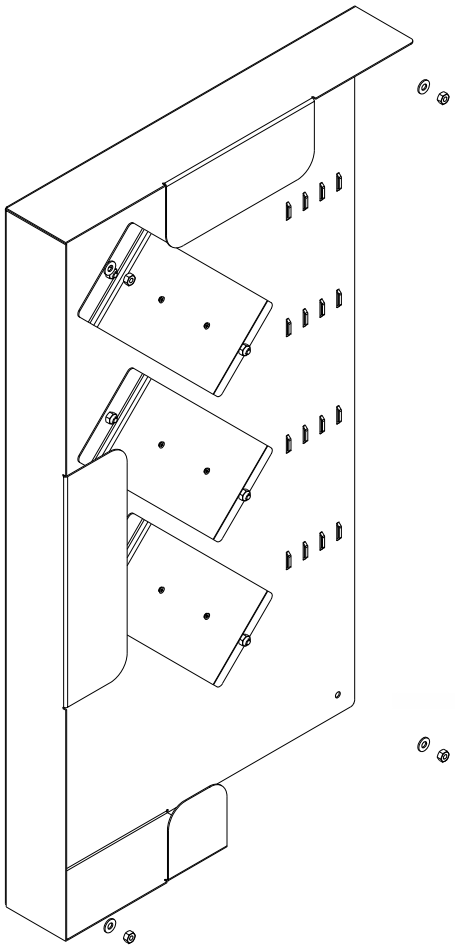
MDC-CB accessories and replacement items are listed in the following table. Contact Telect for price and availability.

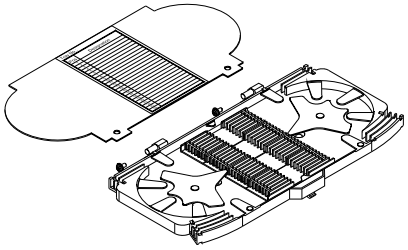
Standard Accessories

Item	Model	Illustration
72-Channel Patch Module Connected to 100 Ft of OSP Cabling* (dry, flexible, unarmored cable with 72, 250 µm strands fully protected in subunits, along with fan-out blocks, one cable clamp and heat-shrink tubing) * Custom cable lengths available.	**MDC-P72N-F100D**	
Splitter Modules **1 x 4** **1 x 8** **1 x 16** **1 x 32**	 **MDC-SP-N04S** **MDC-SP-N08S** **MDC-SP-N16S** **MDC-SP-N32S**	
Cabinet Base, 12 in.	**MDC-R12**	
Concrete Anchor Kit, 6 in., Seismic	**MDC-CBAK**	

Item	Model	Illustration
Cable Entrance Clamp Kit (includes 4 clamps)	**MDC-CLMP**	
Ground Bonding Kit for Armored OSP Cable[1]	**KIT-BOND**	

1. Kit contains hardware for OSP armored cable from 0.5 in. (12.7 mm) to 1.6 in. (40.64). Kit also contains an 11 in. (~280 mm), 6 AWG ground wire assembly with single-hole lugs for #10 studs on both ends.

Item	Model	Illustration
72-Channel Patch Module Only* (with dust covers in both ends of SC/APC adapters; without cabling, clamps, or fan-out blocks	**MDC-P72N**	
Splice Box* for In-Cabinet Splicing[1]	**MDC-SPLC**	

Item	Model	Illustration
Splice Cassette (includes cassette label)	**MDC-HS24**	
Splice Sleeves, Pkg of 12	**101521-12**	

1. Installs on inside of rear door. Installation and routing of cable is different with in-cabinet splicing.

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